

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Serial No. 10/772,071  
Confirmation No. 1712

I hereby certify that this correspondence is being transmitted to the United States Patent & Trademark Office via electronic submission or facsimile on the date indicated below:

<u>2/20/2007</u>	<u>/Pamela Gerik/</u>
Date	Pamela Gerik

**DECLARATION OF CHARLES HUSTON UNDER 37 C.F.R. § 1.132**  
**REGARDING FILE HISTORY U.S. PAT. NO. 5,627,549**

I, Charles D. Huston, hereby declare and state that:

1. I am the attorney of record in the captioned case.
2. Exhibit A attached hereto is a copy of the file history of U.S. Pat. No. 5,627,549 obtained from Specialized Patent.
3. The parent Serial No. 08/282,893 was filed July 29, 1994. A continuation was filed January 16, 1996 and begins at page 78 in the attached Exhibit A. A Preliminary Amendment was filed January 16, 1996 and begins at page 82 in Exhibit A.
4. The Office Action of Oct. 25, 2006 in paragraph 4 cites claims 1-2 of Dimitradis et al as providing support for “providing time and location sensitive advertising information to a user, wherein the position, as disclosed in the specification, is derived from GPS.”

5. While the specification of U.S. Pat. No. 5,627,549 (Park) may be relevant to the examination of the captioned application, it appears the subject matter cited in paragraph 4 of the Office Action of Oct. 25, 2006 is new matter and not prior art to the captioned application.

6. I declare that all statements made herein of my own knowledge are true, and that all statements of my own belief are believed to be true, and further that these statements were made with the knowledge that willful false statements are punishable by fine or imprisonment, or both, under the United States Code, Title 18 § 1001, and that such willful false statements may jeopardize the validity of the patent, and any reexamination certificate issuing thereon.

Feb. 20, 2007

Date

/Charles D. Huston/

Charles D. Huston



## ***SPECIALIZED PATENT SERVICES***

2001 Jefferson Davis Highway, Suite 1007  
Arlington, VA 22202

Full Service Intellectual Property Copy & Research Services

Telephone: 703-415-1555

Facsimile: 703-415-1557

E-mail:

[specialpat@aol.com](mailto:specialpat@aol.com)

Internet:

[www.specializedpatent.com](http://www.specializedpatent.com)

**Chad Huston, Esquire**

**DAFFER McDANIEL, LLP**

**US Prosecution File History: 5,627,549  
(Including 08/282,893)**

Your Reference: 5863-00203

342-357  
342 357  
CLASS  
ISSUE CLASSIFICATION

5627549

UTILITY  
SERIAL  
NUMBER 08/585604

PATENT DATE  
MAY 06 1997

PATENT  
NUMBER

SERIAL NUMBER  
08/585,604

FILING DATE  
01/16/96

CLASS  
342

SUBCLASS

357

GROUP ART UNIT  
2202

5627549

APPLICANTS  
MICHAEL C PARK, PORTLAND, OR.  
MICHAEL

TMB

\*\*CONTINUING DATA\*\*\*\*\*

VERIFIED

THIS APPLN IS A CON OF

08/282,893 07/29/94 now abandoned

TMB

22C

3/12/95

\*\*FOREIGN/PCT APPLICATIONS\*\*\*\*\*

VERIFIED

TMB

none

FOREIGN FILING LICENSE GRANTED 02/06/96

Foreign priority claimed  
35 USC 119 conditions met

☐ yes ☒ no  
☐ yes ☒ no

AS  
FILED

STATE OR  
COUNTRY

SHEETS  
DRWGS.

TOTAL  
CLAIMS

INDEP.  
CLAIMS

FILING FEE  
RECEIVED

ATTORNEY'S  
DOCKET NO.

Verified and Acknowledged

Examiner's Initials

OR

7

14

3

\$750.00

P126-FWC

ELMER GALBI

SEIKO COMMUNICATIONS SYSTEM INC  
1625 N W AMBER GLEN COURT SUITE 140  
BEAVERTON OR 97006

DUAL CHANNEL ADVERTISING REFERENCING VEHICLE LOCATION

TITLE

U.S. DEPT. OF COMM./PAT. & TM—PTO-436L (Rev. 11-29-96)

PARTS OF APPLICATION  
FILED SEPARATELY

NOTICE OF ALLOWANCE MAILED

CLAIMS ALLOWED

Total Claims

Print Claim

ISSUE FEE

Amount Due

Date Paid

\$290

4/7/97

Assistant Examiner

Theodore M. Blum

THEODORE M. BLUM  
EXAMINER  
GROUP ART UNIT 222

Primary Examiner

DRAWING

Sheets Drwg.

Figs. Drwg.

Print Fig.

196

7

2

ISSUE  
BATCH  
NUMBER G92

Label  
Area

PREPARED FOR ISSUE

WARNING: The information disclosed herein may be restricted. Unauthorized disclosure may be prohibited by the United States Code Title 35, Sections 122, 181 and 368. Possession outside the U.S. Patent & Trademark Office is restricted to authorized employees and contractors only.

ISSUE FEE IN FILE

08/282893

Class Subclass  
ISSUE CLASSIFICATION

UTILITY SERIAL NUMBER	08/282893	PATENT DATE	PATENT NUMBER
-----------------------------	-----------	-------------	------------------

SERIAL NUMBER	FILING DATE	CLASS	SUBCLASS	GROUP ART UNIT	EXAMINER
08/282,893	07/29/94	342	357	2202	BLUM

APPLICANTS

MICHAEL C. PARK, PORTLAND, OR.

\*\*CONTINUING DATA\*\*\*\*\*  
VERIFIED

\*\*FOREIGN/PCT APPLICATIONS\*\*\*\*\*  
VERIFIED

FOREIGN FILING LICENSE GRANTED 08/25/94

Foreign priority claimed 35 USC 119 conditions met	<input type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> yes <input type="checkbox"/> no	AS FILED →	STATE OR COUNTRY	SHEETS DRWGS.	TOTAL CLAIMS	INDEP. CLAIMS	FILING FEE RECEIVED	ATTORNEY'S DOCKET NO.
Verified and Acknowledged	Examiner's Initials		OR	7	14	3	\$710.00	P126

ADDRESS

ELMER GALBI  
SEIKO TELECOMMUNICATION SYSTEMS INC  
9205 G W GEMINI DRIVE 1625 N.W. AMBER GLEN Court, Suite 140  
BUILDING 140  
BEAVERTON OR 97006

TITLE

DUAL CHANNEL ADVERTISING REFERENCE VEHICLE LOCATION

U.S. DEPT. of COMM.-Pat. & TM Office - PTO-436L (rev. 10-78)

PARTS OF APPLICATION FILED SEPARATELY		Applications Examiner	
NOTICE OF ALLOWANCE MAILED		CLAIMS ALLOWED	
		Total Claims	Print Claim
Assistant Examiner			
ISSUE FEE		DRAWING	
Amount Due	Date Paid	Sheets Drwg.	Figs. Drwg.
		Print Fig.	
Label Area		ISSUE BATCH NUMBER	
Primary Examiner			
PREPARED FOR ISSUE			
WARNING: The information disclosed herein may be restricted. Unauthorized disclosure may be prohibited by the United States Code Title 35, Sections 122, 181 and 368. Possession outside the U.S. Patent & Trademark Office is restricted to authorized employees and contractors only.			

08/282893

APPROVED FOR LICENSE

A-

INITIALS

AUG 23 9436

Date  
Entered  
or  
Counted

## CONTENTS

Date  
Received  
or  
Mailed

1. Application \_\_\_\_\_ papers.

2. *Change of Address*

9-29-94

3. *Re-section (3mos)*

3/21/95

4. *Interview Summary*

7/6/95

5. *Amat A*6-19-95 *C9AN*  
6-15-956. *Final Rep 3 mos*

7-18-95

7. *Certified Copy (Moot)*

7-31-95

8. *Rep. Ext. Time*

11-17-95

9. *Notice of Appeal*

11-17-95

10.

11.

12.

13.

14.

15.

16.

17.

18.

19.

20.

21.

22.

23.

24.

25.

26.

27.

28.

29.

30.

31.

32.

(FRONT)

08/585604

## PATENT APPLICATION



08585604

APPROVED FOR LICENSE

INITIALS

Date  
Entered  
or  
Counted

## CONTENTS

Date  
Received  
or  
Mailed

	1. Application	7 Pts. papers.	
	10	Dr B	1/16/96
	11	Dr C	1/16/96
6/19	12	Project 3 months	6/21/96
	13	Reg. Ext. Time	11-8-96
	14	Amtdt D	11-8-96
11/24	15	P.T.O. L-37	11-28-96
2-4-97	16	P.T.O. L-85	11-28-96
	9.	Form Drawings (6 sets) set 1	12-20-96
	10.	PROGRAM MAY 0 1997	
	11.		
	12.		
	13.		
	14.		
	15.		
	16.		
	17.		
	18.		
	19.		
	20.		
	21.		
	22.		
	23.		
	24.		
	25.		
	26.		
	27.		
	28.		
	29.		
	30.		
	31.		
	32.		

Staple Issue Slip Here

POSITION	ID NO.	DATE
CLASSIFIER		
EXAMINER	19	3/22/04
TYPIST	330	3/23/04
VERIFIER	333	3/23/04
CORPS CORR.	11311	3/23/04
SPEC. HAND		
FILE MAINT.		
DRAFTING		

### INDEX OF CLAIMS

Claim	Date
Final	
Original	
3	17
16	95
17	95
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	
31	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	
45	
46	
47	
48	
49	
50	

Claim	Date
Final	
Original	
51	
52	
53	
54	
55	
56	
57	
58	
59	
60	
61	
62	
63	
64	
65	
66	
67	
68	
69	
70	
71	
72	
73	
74	
75	
76	
77	
78	
79	
80	
81	
82	
83	
84	
85	
86	
87	
88	
89	
90	
91	
92	
93	
94	
95	
96	
97	
98	
99	
100	

#### SYMBOLS

- ✓ ..... Rejected
- ..... Allowed
- (Through numeral) ..... Canceled
- + ..... Restricted
- N ..... Non-elected
- I ..... Interference
- A ..... Appeal
- O ..... Objected

(LEFT INSIDE)



[illegible]

INTERFERENCE SEARCHED			
Class	Sub.	Date	Exmr.

SEARCH NOTES		
	Date	Exmr.

(RIGHT OUTSIDE)

## AREA

\* U.S. GOVERNMENT PRINTING OFFICE: 1992-327-409

APPLICATION NUMBER 09/585604		ORIGINAL CLASSIFICATION CLASS 342 SUBCLASS 357	
APPLICATION SERIAL NUMBER 09/585604		CROSS REFERENCE(S) SUBCLASS (ONE SUBCLASS PER BLOCK)	
APPLICANT'S NAME (PLEASE PRINT) MICHAEL C. PARK		CLASS 364 340	SUBCLASS 449.1 996
IF REISSUE, ORIGINAL PATENT NUMBER			
INTERNATIONAL CLASSIFICATION H 04 B G 01 S 7 / 185 5 / 02		GROUP ART UNIT 2202	ASSISTANT EXAMINER (PLEASE STAMP OR PRINT FULL NAME) THEODORE M. BLUM PRIMARY EXAMINER (PLEASE STAMP OR PRINT FULL NAME) THEODORE M. BLUM
TO 270 (REV. 5-91)		ISSUE CLASSIFICATION SLIP EXAMINER GROUP ART UNIT 222	

Staple Issue Slip Here

POSITION	ID NO.	DATE
CLASSIFIER		
EXAMINER	258	2/5
TYPIST		
VERIFIER		
CORPS CORR.		
SPEC. HAND		
FILE MAINT.		
DRAFTING		

### INDEX OF CLAIMS

Claim	Date
6	11
18	25
25	96
15	✓
16	✓
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	
31	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	
45	
46	
47	

Claim	Date
51	
52	
53	
54	
55	
56	
57	
58	
59	
60	
61	
62	
63	
64	
65	
66	
67	
68	
69	
70	
71	
72	
73	
74	
75	
76	
77	
78	
79	
80	
81	
82	
83	
84	
85	
86	
87	
88	
89	
90	
91	
92	
93	
94	
95	
96	
97	
98	
99	
100	

#### SYMBOLS

✓ ..... Rejected  
 = ..... Allowed  
 - (Through numeral) Canceled  
 + ..... Restricted  
 N ..... Non-elected  
 I ..... Interference  
 A ..... Appeal  
 O ..... Objected

<b>SEARCHED</b>			
<b>Class</b>	<b>Sub.</b>	<b>Date</b>	<b>Exmr.</b>
342 364 340	357 449 996	UPDATED FROM SN. 08/282893	MFB
UPDATED		11-25-96	MBS

INTERFERENCE SEARCHED			
Class	Sub.	Date	Exmr.
342	357	11-25-96	TMB
364	449		
340	996		

SEARCH NOTES		
	Date	Exmr.

(RIGHT OUTSIDE)

PATENT APPLICATION SERIAL NO. 00/282893

U.S. DEPARTMENT OF COMMERCE  
PATENT AND TRADEMARK OFFICE  
FEE RECORD SHEET

080 RJ 08/08/94 08282893

1 101 710.00 EK



7/0

710-101

A

00/282893

**DUAL CHANNEL ADVERTISING REFERENCING VEHICLE LOCATION**msc  
B.C.Background of the Invention

The present invention relates generally to vehicle information systems, and particularly to vehicle information systems providing information relevant to current vehicle location.

A variety of traffic related information is now available for use in aiding vehicle travel, especially in urban road networks. A travel information device likely to be soon more commonly incorporated into vehicles is a vehicle position detecting system, e.g., the well known global positioning system (GPS) providing satellite broadcast to determine location of a receiving GPS device. Vehicles with GPS capability, therefore, have the very useful feature of tracking current vehicle position.

Given access to current vehicle location, i.e., longitude and latitude values, a proposed information system provides vehicle position relative to a map representation of a given region, e.g., a map display of city streets with vehicle position indicated by street location rather than longitude and latitude position. Thus, a digital map database further supports vehicle

position display by reference to more meaningful information, i.e., by reference to a street map. To be of value, however, the digital map database must be current and comprehensive, i.e., have information relevant to wherever a vehicle may be used.

5        Massive digital map databases are, however, inherently expensive and difficult to include in mass produced products such as is desirable in a GPS-capable consumer product. Digital map databases require license fees, large amounts of memory, frequent and expensive revision, and generally cannot be comprehensive  
10        enough to allow use throughout the entire world. It is not economically feasible to provide in an inexpensive consumer product a digital map database covering the entire world, or at least a significant geographic region. If the device is prepared for use throughout the world, an incredibly massive digital map  
15        is required giving rise to significant cost and maintenance requirements. If only selected geographic regions are incorporated into the digital map, the device cannot be used outside such geographic regions without post-manufacture modification or manipulation of numerous storage devices, e.g., a  
20        library of CD-ROM discs.

It would be desirable, therefore, for a vehicle information device to be usable in any geographic area as manufactured yet still maintain an ability to indicate vehicle position information beyond merely longitude and latitude. In particular,

people need more meaningful information than merely longitude and latitude, yet a massive digital map is difficult to justify in the context of relatively inexpensive consumer products. The need for current vehicle position is most typically a need to  
5 know current vehicle position relative to a location of interest. Unfortunately, customizing massive digital databases to provide reference to individual vehicle operator locations of interest is impractical. It would be desirable to avoid a requirement of procuring and maintaining in the travel information device a  
10 massive digital database, yet maintain an ability to reference geographic locations. The subject matter of the present invention provides such a vehicle travel information device.

#### Summary of the Invention

In accordance with the present invention, a travel  
15 information device in a vehicle includes a vehicle position detecting device and collects vehicle position information while also collecting data relevant geographic points of interest to provide a display indicating position of a point of interest relative to a current vehicle location.

20 In the illustrated and preferred form of the present invention, collecting information relevant to geographic points of interest is by radio signal data broadcast in conjunction with radio signal voice broadcast, such as advertising, whereby a user



interrogates a device under the present invention to collect by data broadcast detailed information concerning an advertisement of interest provided by a companion voice broadcast. The data broadcast includes precise location information providing, in  
5 conjunction with current vehicle position, a basis for presenting a display graphically showing relative position between the geographic point of interest, such as the location of an advertiser, and the current vehicle location.

According to one aspect of the present invention, storage of  
10 information relative to geographic points of interest builds for the user a personal electronic reference for later selectively displaying such information, including ability to selectively display a representation of location relative to a then current vehicle position.

15 The subject matter of the present invention is particularly pointed out and distinctly claimed in the concluding portion of this specification. However, both the organization and method of operation of the invention, together with further advantages and objects thereof, may be best understood by reference to the  
20 following description taken with the accompanying drawings wherein like reference characters refer to like elements.

#### Brief Description of the Drawings

For a better understanding of the invention, and to show how the same may be carried into effect, reference will now be made, by way of example, to the accompanying drawings in which:

FIG. 1 illustrates a vehicle information system, a given  
5 road network, and a vehicle travelling within the road network and carrying a travel information device according to a preferred form of the present invention.

FIG. 2 is a block diagram of the travel information device for the vehicle of FIG. 1.

10 FIG. 3 illustrates the front panel controls and display of the travel information device of FIG. 2 as viewed by the operator of the vehicle of FIG. 1.

FIG. 4 illustrates by flow chart a first method of collecting data for storage by the travel information device  
15 wherein the user hears by voice broadcast information of interest and selects corresponding data broadcast information for storage.

FIG. 5 illustrates by flow chart an alternative method for collecting information from the data broadcast whereby the operator designates collection criteria and the travel  
20 information device automatically collects qualifying data broadcast information.

FIG. 6 illustrates by flow chart programming for a radio broadcast system coordinating or associating voice radio broadcast with data radio broadcast.

FIG. 7 illustrates by flow chart programming of the travel information device of FIG. 1 for scanning or reviewing of information stored therein.

#### Detailed Description of a Preferred Embodiment

In FIG. 1, a vehicle 10 travels within a road network 12. Network 12 includes main arterial roadways as illustrated, but as may be appreciated would be significantly more complex. For the present illustration, it will be understood that vehicle 10 travels throughout road network 12 along any selected travel route. Furthermore, the operator of vehicle 10 travels within road network 12 to and from geographic points of interest 14, individually designated 14a-14d. While only several such geographic points of interest 14 are indicated in FIG. 1, it will be understood that any number of such geographic points of interest 14 may exist within road network 12. Furthermore, geographic points of interest 14 for one individual vary relative to that of another individual. Accordingly, reference herein to geographic points of interest 14 shall be taken to be locations of interest to a particular person.

Also illustrated in FIG. 1, radio broadcast system 20 provides a combined radio signal voice broadcast 22 and radio signal data broadcast 26. While illustrated as a single radio broadcast system 20, it will be understood that voice broadcast 22 and data broadcast 26 could originate from separate radio signal broadcast facilities. Under the preferred form of the present invention, however, voice broadcast 22 and data broadcast 26 originate from a common FM radio source as provided under the "Gaskill" paging system. The present invention may be implemented according to many paging system protocols, but as illustrated herein operates under the time-division multiplexed protocol of the Gaskill paging system, as illustrated in U.S. Patent Nos. 4,713,808 and 4,897,835. The disclosure of U.S. Patent Nos. 4,713,808 and 4, 897,835 are incorporated herein fully by reference thereto.

The Gaskill paging system and associated receiving devices provide an inexpensive, highly battery-efficient and highly miniaturized paging device which, under the illustrated embodiment of the present invention, constitutes a data radio signal receiver 62 (FIG. 2) as a conduit for data broadcast 26 delivery to device 40.

Generally the Gaskill paging system uses FM radio signal transmission facilities to broadcast within a side-band frequency paging signal data packets according to a time-division

multiplexed protocol. Thus, voice broadcast 22 comprises the normal FM radio signal broadcast and data broadcast 26 represents the side-band paging system broadcast.

It will be understood, therefore, that radio broadcast system 20 provides coordinated voice and data by radio signal. In particular, radio broadcast system 20 receives voice advertisement and data message information 28, e.g., an advertising subscription, and integrates the data message portion thereof into other incoming paging system data packets originating from a Gaskill paging system clearinghouse 30. In this manner, radio station 20a coordinates or associates voice and data broadcasts 22 and 26, respectively. As may be appreciated, however, the data message portion of information 28 could be routed through clearinghouse 30, in which case radio station 20a associates a voice broadcast 22 with a data broadcast 26 originating entirely from clearinghouse 30. Such association may be provided by a number of arrangements, but under the illustrated form of the present invention, association of voice broadcast 22 and data broadcast 26 shall be by time relation, e.g., concurrently broadcast, broadcast in close time relationship, or at given time offset.

Vehicle 10 includes a travel information device 40 receiving by way of antenna 42 the voice broadcast 22 and data broadcast

26. Thus, device 40 receives conventional FM voice broadcasts and paging data broadcasts the Gaskill paging system protocol. In this manner, device 40 receives associated voice and data broadcasts whereby an operator of vehicle 10, upon hearing a  
5 voice broadcast of interest, captures the associated data broadcast to collect and store within device 40 detailed information, i.e., a data record including longitude and latitude, for a geographic point of interest 14.

FIG. 1 also illustrates a global position system (GPS)  
10 satellite 50 providing transmission 52. Details and use of GPS transmission and the collection of such transmission to determine location of a GPS receiver are well known. Use of GPS transmission 52 under the present invention is by incorporation of a global position system receiving device into travel  
15 information device 40 collection of a current vehicle position therewith as described more fully hereafter.

Thus, travel information device 40 receives several channels of information. First, voice broadcast 22 provided by radio broadcast system 20 provides to the vehicle operator a stream of  
20 voice information potentially including reference to geographic points of interest 14, i.e., advertisers located within road network 12. Second, data broadcast 26, as provided in association with voice broadcast 22, provides further detailed text message information captured selectively by device 40, e.g.,

when commanded by the operator of vehicle 10. This establishes, among other detailed information, a precise location for a geographic point of interest 14. Third, the global position system transmission 52 provides a current vehicle location and, therefore, a basis for presenting location of geographic points of interest 14 relative to current vehicle position.

As described more fully hereafter, device 40 maintains a database containing a collection of data records obtained from data broadcast 26. Each data record corresponds to a geographic point of interest 14, and device 40 displays a vector, i.e., distance and direction, indicator illustrating the relative position of a given geographic point of interest 14 relative to current vehicle location. In this manner, device 40 constructs and maintains information specific to a user of device 40, i.e., maintains information relative to geographic points of interest 14 selected by the operator of vehicle 10, and further provides meaningful position information beyond longitude and latitude for such points of interest 14 without reference to a massive digital map database of the road network 12. Device 40 maintains current information relative to a given geographic region and specific to selected geographic points of interest 14. Under one aspect of the present invention, such geographic points of interest 14 correspond generally to locations of advertisers providing, by way of radio broadcast system 20, both voice information in broadcast 22 and detailed message or text data in broadcast 26.

This allows listeners to later reference such data and locate the corresponding geographic point of interest 14 relative to a then current vehicle position.

FIG. 2 illustrates in block diagram travel information device 40. In FIG. 2, a microprocessor 60 orchestrates generally operation of device 40. Data radio signal receiver 62 couples antenna 42 to microprocessor 60. As contemplated under the preferred form of the present invention, data radio signal receiver 62 comprises essentially a paging system receiver operating under the Gaskill paging system. Thus, the Gaskill system paging device provided as receiver 62 serves as a data terminal collecting data broadcast 26 and providing to microprocessor 60 detailed information associated with, for example, an associated voice advertisement broadcast in voice broadcast 22. A voice radio receiver 64, also coupled to antenna 42, receives the voice broadcast 22 and delivers a voice signal 66 to an amplifier 68 driving a speaker 70. Microprocessor 60 tunes voice radio receiver 64 by way of a tune control 72. Thus, microprocessor 60 selects a radio signal voice broadcast 22 by tune control 72 and, by way of volume control 74 applied to amplifier 68, causes presentation of the corresponding voice broadcast on speaker 70.

A global position system receiver 80 receives the transmission 52 from global position system satellite 50 and



delivers to microprocessor 60 a current vehicle location 82. In this manner, microprocessor 60 requests from global position system radio receiver 80 a current vehicle location and receives in return the current vehicle location 82.

5           Microprocessor 60 receives other vehicle information. For example, a fuel gauge sensor 90 provides a fuel remaining input 92 to microprocessor 60.

Microprocessor 60 drives a display 100. Display 100 presents, for example, tuning and station selection information  
10   relative to the voice radio receiver 60 to provide an FM radio capability wherein the operator of vehicle 10 manipulates input controls 102, i.e., volume, station select, and other controls described more fully hereafter, to listen to a selected voice broadcast 22. Display 100 further presents, as described more  
15   fully hereafter, data relevant to stored geographic points of interest 14 and also graphic indication, i.e., a vector indicating distance and direction, of a selected geographic point of interest 14 relative to the current vehicle location.

A compass 104 provides a vehicle orientation input 106 to  
20   microprocessor 60. Device 40 uses the current vehicle position, i.e., as provided by vehicle location 82, and also the current vehicle orientation, as provided by input 106, to calculate a graphic indication, i.e., a display vector orientation,

indicating direction of travel for a geographic point of interest 14 relative to the current vehicle position. To portray on display 100 the relative direction, i.e., toward the geographic point of interest, current vehicle orientation is considered.

5 Thus, calculation and display of a vector on display 100 begins with calculation of distance between two points designated by longitude and latitude values, i.e., distance between the current vehicle location and the geographic point of interest 14, and calculation of an angle of orientation for a direction of travel.

10 In other words, display 100 has a fixed relationship relative to vehicle 10 and vehicle orientation input 106 supports an accurate display of a direction of travel as presented by vector icon on display 100. Furthermore, the display presented may be updated as vehicle 10 moves and the distance between vehicle 10 and the

15 geographic point of interest 14 changes and also as vehicle orientation changes.

FIG. 3 illustrates a front view of the travel information device 40 monitoring the combined voice and data broadcasts 22 and 26 and global positioning system broadcast 52.

20 FIG. 3 also illustrates display 100 and input controls 102. Input controls 102 include a tune dial 102a, a volume dial 102b and an AM/FM switch 102c. As may be appreciated, device 40 operates, from a user perspective, in part as a conventional car radio. The user manipulates input controls 102a-102c to listen

25 to a voice broadcast 22 on speakers 70. Additional control

inputs 102 for device 40 include a clock button 102d, a tuner button 102e, a where information button 102f, a stored information button 102g, a filter button 102h, and a here button 102i. Use of input controls 102d-102i will be explained more fully hereafter, but generally provide to the user various display presentations relative to display 100 and modes of operation for device 40.

As illustrated in FIG. 3, display 100 presents a text message display portion 100a showing information such as vendor name, address, and current marketing information, for example, a sale or promotional activity including a date of availability for the promotional activity. Display portion 100a further presents a category of vendor, e.g., sporting goods. As may be appreciated, the data records obtained from data broadcast 26 and stored in device 40 include a variety of fields as indicated generally by the display portion 100a in FIG. 3. In such form, information maintained in device 40 may be manipulated in the manner of a database, e.g., searching, sorting, and other such database record management functions.

Display 100 further provides a vector angle portion 100b and a vector distance-to-travel portion 100c. As described herein above, angle portion 100b indicates the relative orientation of a direction of travel from the current vehicle location to a selected geographic point of interest 14. Distance-to-travel

portion 100c represents the distance separating the current vehicle location and the geographic point of interest. The angular orientation of portion 100b desirable takes into account the current vehicle 10 orientation input 106 as provided by  
5 compass 104. Presentation of vector angle portion 100b should, therefore, indicate generally a direction of travel considering the viewer's perspective, i.e., looking at display 100 from within vehicle 10, to indicate appropriately the relative orientation of a direct line-of-sight or direction-of-travel from  
10 the current vehicle position to the geographic point of interest 14.

Clock button 102d, when pressed, causes presentation by microprocessor 60 on display 100 the current time of day. Tuner button 102e, when pressed, causes presentation on display 100 by  
15 microprocessor 60 information relevant to tuning voice broadcast radio 64, e.g., frequency of station currently tuned, preset features available, and any other information normally displayed in connection with operation of a voice broadcast radio.

Where information button 102f, when pressed, indicates to  
20 microprocessor 60 operator desire to collect information from data broadcast 26. For example, voice broadcast 22 and data broadcast 26 are synchronized broadcasts and the operator of device 40 hears an advertisement of interest provided by way of voice broadcast 22 and presses the where information button 102f

for further information. Microprocessor 60 then collects a data record, i.e., text message information relative to the advertisement of interest, by way of data broadcast 26 and data receiver 62. Text message information presented in display  
5 portion 100a is obtained, therefore, by the operator activating the where information button 102f during or just after a voice broadcast advertisement of interest.

Device 40 holds multiple data records, i.e., one for each geographic point of interest 14. Stored information button 102g  
10 allows scanning through such stored data records and selective display of the previously stored data record for a geographic point of interest 14. In this manner, the user of device 40 constructs a personal electronic reference tracking travel information including data records for particular geographic  
15 points of interest 14, i.e., data records selected by and of interest to a particular user. The user thereby builds a personalized and current database of geographic points of interest 14.

Filter button 102h drives device 40 into an automatic data  
20 collection mode according to user selected filter criteria. For example, device 40 monitors the stream of data provided in data broadcast 22 and compares location information therein to the current vehicle location to collect all references within a given distance of current vehicle location. Additionally, the user

establishes a category of interest, e.g., auto parts advertisements, grocery store advertisements, sporting goods or restaurant advertisements, to further filter information available in data broadcast 22. In this manner, the user of  
5 device 40 creates automatically a customized database by designating geographic points of interest 14 according to user-selected criteria.

The here button 102i provides another method of creating a data record concerning a geographic point of interest 14 within  
10 device 40, in this case one corresponding to current vehicle location. The operator presses here button 102i and creates a geographic point of interest 14 data record corresponding to current vehicle location. This allows the user to begin at a given location, operate here button 102i, and have ability to  
15 reference that given location later while travelling, e.g., to return to that given location or to have directional indication of that given location from another vehicle location. The data record created by device 40 in response to the here button 102i includes at least the longitude and latitude information  
20 corresponding to the vehicle position at the time of button 102i activation. Additional textual information can be entered by the user if desired, e.g., textual information entered by operation of control inputs 102 in response to supporting prompts presented on display 100. For example, the user may wish to name a  
25 location in conjunction with activating the here button 102i for

meaningful later reference thereto.

FIG. 4 illustrates programming of microprocessor 60 for information collection from data broadcast 26, i.e., in this case in response to activation of where information button 102f. In  
5 FIG. 4, it will be assumed that voice broadcast 22 and data broadcast 26 are associated by simultaneous broadcast. As may be appreciated, other association methods may be employed and incorporated into the illustrated embodiment of the present invention. Processing in response to user activation of the  
10 where information button 102f begins in block 140 where microprocessor 60 collects the most recently received data record of data broadcast 26. As shown in the present embodiment, voice broadcast 22 and data broadcast 26 are associated by simultaneous presentation and microprocessor 60 need only collect in response  
15 to activation of the where information button 102f the current presented or most recently presented data record in data broadcast 26. In anticipation of such task, microprocessor 60 always collects in an input buffer (not shown) each data record presented in data broadcast 26. For each new data record  
20 presented, the old, previous data record is replaced in the input buffer. Thus, when the operator activates where information button 102f, the input buffer holds, or will soon hold, a complete data record taken from data broadcast 26 and associated with the current voice broadcast 22 presentation. Thus,  
25 processing in block 140 implements a method of association

between voice broadcast 22 and data broadcast 26.

Decision block 142 determines whether the current voice broadcast 22 is related to the most recently received data record. For example, not every voice broadcast 22 presentation, 5 e.g., advertisement, will have an associated data record available in data broadcast 26. For example, if the data record most recently received by way of data broadcast 26 is "stale" then it should not be taken as related to the current voice broadcast 22 presentation. In such case, processing branches 10 through block 144 where device 40 presents on display 100 the message "where information not available" and processing terminates. If, however, the data record most recently received is related to the voice broadcast 22 presentation, i.e., not "stale", then processing advances to block 146 where 15 microprocessor 60 obtains the current vehicle location and vehicle orientation. As may be appreciated, determining whether a given data record is "stale" may be implemented by time-stamping data records held in the input buffer. The length of time required to become "stale" in the input buffer is variable 20 and a function of how quickly the operator of vehicle 10 must activate the where information button 102f.

Microprocessor 60 then calculates in block 148 the angle portion 100b and distance-to-travel portion 100c. In other words, microprocessor 60 calculates and angle of orientation for



the arrow icon presented in portion 100b using the current vehicle orientation 106 and the direction of travel toward the subject geographic point of interest 14. Microprocessor 60 then calculates the distance-to-travel value for portion 100c as the  
5 separation between the current vehicle position and subject geographic point of interest 14.

As may be appreciated, a timer interrupt may also be set to iteratively execute procedures updating the display portions 100b and 100c as the vehicle changes orientation and location  
10 relative to the geographic point of interest 14 associated with the current data record. Furthermore, microprocessor 60 may take into account fuel remaining input 92 in comparison to expected vehicle 10 mileage and consider separation between current vehicle position and the subject geographic point of interest 14.  
15 If vehicle 10 holds insufficient fuel to make the trip to the subject geographic point of interest, an appropriate display may be presented to indicate such condition to the vehicle operator.

Continuing to block 150, microprocessor 60 presents in display portion 100a the text message portion of the current data  
20 record, e.g., vendor name, address, phone number, and any other special promotional information provided. In decision block 152, the operator has opportunity to keep for permanent storage the current data record, in which case processing branches through block 154 where the current data record is stored for later

reference, i.e., by operation of the stored information button 102g. Otherwise, processing exits directly from decision block 152.

FIG. 5 illustrates by flow chart an alternative method for gathering information from the data broadcast 22, i.e., gathering information automatically according to user-designated criteria in response to filter button 102h. In this manner, the operator need not monitor voice broadcast 22 to collect information of potential interest by way of data broadcast 26.

In FIG. 5, processing begins in block 180 where microprocessor 60 obtains, from the user, appropriate filtering criteria. For example, user interaction is conducted by way of display 100 and alternate functions defined for control inputs 102 to collect from the user a designation of filter criteria. For example, the user may be interested in all data records broadcast and being associated with a location within a given distance of current vehicle location. In this manner, the user collects advertising information for vendors in close and convenient proximity to current vehicle location. Also, data records are classified according to category, and the user designates as qualifying under user criteria certain categories of information. For example, the user may be interested in certain types of products or services advertised and having associated data records in data broadcast 22. In any event,

block 180 represents user designation of criteria applied to data records appearing in data broadcast 22, i.e., which of those data records will be accepted and stored by device 40 for later reference by operation of the stored information button 102g.

5           Continuing to block 182, microprocessor 60 gets the next data record provided in data broadcast 22 and, in decision block 184, applies the user-designated criteria. If the data record collected in block 182 meets the user-designated criteria provided in block 180, then processing advances to block 186.  
10   Otherwise, processing returns to block 182 from decision block 184 to collect the next data record appearing in data broadcast 26. In block 186, microprocessor 60 obtains the current vehicle position and orientation. Continuing to block 188, microprocessor 60 calculates and displays the arrow icon at  
15   appropriate angle of orientation and the distance-to-travel value in display portions 100b and 100c, respectively.

          Then, in block 190, microprocessor 60 displays the text message data available in the collected data record. An alarm presented in block 190 indicates to the user collection of a data  
20   record potentially of interest, i.e., satisfying the user-designated criteria provided in block 180. Decision block 192 allows the user opportunity to discard or keep for permanent storage the data record just collected. Accordingly, if the user declines storage of the just-collected data record then

processing returns immediately to block 182. Otherwise,  
processing advances through block 194 where the just-collected  
data record is stored for later reference by operation of the  
stored information button 102g. Processing then returns from  
5 block 194 to block 182 for collection of a next data record.

As may be appreciated, an exit procedure (not shown)  
interrupts the data record collection loop represented by flow  
chart in FIG. 5. For example, the user may wish to terminate  
collection or may wish to modify the designation of data record  
10 collection criteria in block 180. Furthermore, processing at  
decision block 192 need not forego collection of additional data  
records in data broadcast 26. In other words, additional records  
may be queued for review by the operator even though  
microprocessor 60 is awaiting input at decision block 192. Also,  
15 should the operator not respond immediately at decision block  
192, a time-out feature allows processing to advance without  
requiring user input, e.g., accepts for storage the data record  
qualifying under the user designated criteria and allows the user  
to later delete the record from device 40.

20 FIG. 6 illustrates by flow chart processing conducted by the  
radio broadcast system 20 in providing associated voice broadcast  
22 and data broadcast 26. In FIG. 6, processing begins in block  
200 where radio broadcast system 20 receives an advertising  
subscription including both voice advertising for presentation in

the voice broadcast 22 and message information for presentation in the data broadcast 26. As noted herein above, association between the voice advertisement and message data is by simultaneous broadcast. Thus, system 20 transmits in block 202 the text message information and location information in data broadcast 26 followed by transmission of the voice presentation in voice broadcast 22. As may be appreciated, processing in blocks 202 and 204 repeats intermittently, i.e., according to how often and when the dual channel advertisement is to be broadcast.

FIG. 7 illustrates programming for microprocessor 60 in response to activation of the stored information button 102g. In FIG. 7, processing begins in block 220 where microprocessor 60 presents opportunity for the user to scan stored data records according to a given criteria, i.e., get a display selection from the user of device 40. For example, the user wishes to display data records according to a certain sequence or to display only records meeting a certain criteria, e.g., restaurant advertisements. Having obtained a display selection from the user, processing advances to block 224 where microprocessor 60 gets a next data record according to the user-designated display selection. Continuing to block 226, microprocessor 60 obtains the current vehicle position and orientation. Then, in block 228, microprocessor 60 calculates and presents display portions 100b and 100c, i.e., displays vector information indicating the distance and relative orientation to a geographic point of

interest 14 corresponding to the data record currently presented.  
Continuing to block 230, microprocessor 60 displays at display  
portion 100a the text portion of the data record for review by  
the user. Decision block 232 provides the user opportunity to  
5 terminate scanning of stored information in which case processing  
exits from decision block 232. If the user continues scanning  
through the scored data records according to the designated  
display selection, then processing returns from decision block  
232 to block 224 where a next data record in the sequence is  
10 selected for review by the user.

Important to note, as the user scans through stored data  
records and obtains a presentation on display 100, the then-  
current vehicle orientation and location are referenced to  
present a then-current relative position in display portions 100b  
15 and 100c, i.e., the current relative direction of travel and  
distance to the geographic point of interest 14 associated with  
the data record currently displayed by device 40. Also,  
processing illustrated in FIG. 7 initiates a timer interrupt  
procedure updating display portions 100b and 100c as the vehicle  
20 orientation and location relative to the currently displayed  
geographic point of interest 14 changes.

The scanning procedure illustrated in FIG. 7 may, as will be  
appreciated, be augmented to include additional features such as  
deleting data records, sorting on various fields of the text

message portion, and applying additional category values whereby the user may better manage a collection of information maintained in device 40 and relevant to travel of vehicle 10 to and from geographic points of interest 14.

5

Thus, an improved vehicle information device and method of operation have been shown and described. Under the present invention, a user builds a customized database containing geographic points of interest, including precise longitude and  
10 latitude information and ability to provide distance and orientation of travel toward the geographic point of interest and in relation to the current vehicle location. In this manner, the user obtains useful information by way of radio signal without requiring reference to a massive digital database of the  
15 surrounding geographic area. Information obtained by radio signal is always current, i.e., replaced by subsequent broadcast. In this manner, the operator maintains a dynamic and up-to-date database of specific geographic points of interest.

It will be appreciated, that the present invention is not  
20 restricted to the particular embodiment or embodiments that have been described and illustrated herein, and that variations may be made therein without departing from the scope of the invention as found in the appended claims and equivalents thereof.

Claims

What is claimed is:

1. A method for providing travel information relative to vehicle location, the method comprising the steps:

5 transmitting information of potential interest, said information of potential interest including records, each record including at least a location corresponding to a geographic point;

10 receiving at travel information devices said information of potential interest;

determining at each travel information device a current location therefor; and

15 selecting at each travel information device ones of said records for display, said display including indication of direction and distance to the corresponding geographic point in relation to said current location for said travel information device.

20 2. A method according to claim 1 wherein said transmitting step includes, in said information of potential interest, also text message data.

3. A method according to claim 2 wherein said text message



data comprises advertising data for a vendor at the corresponding geographic location.

4. A method according to claim 1 wherein said method further comprises the step of carrying said travel information device in a vehicle.

5. A method according to claim 1 wherein said step of transmitting includes transmitting voice information by voice broadcast and text data information by data broadcast, said records being provided in said data broadcast, said voice broadcast and data broadcast being associated whereby presentation of said voice broadcast corresponds to a given portion of said data broadcast.

6. A method according to claim 1 wherein said step of transmitting information comprises the step of transmitting advertising information and said geographic point corresponds to a vendor location associated with said advertising.

*Sub  
A2*

7. A method of operating a travel information device carried by a vehicle along a travel route, the method comprising the steps:  
receiving data records by radio signal, each data record corresponding to a potential point of interest along a travel route and including at least a geographic location for said

potential point of interest;

selecting and storing ones of said data records;

calculating current location for said travel information device; and

5 displaying position relative to said current location of a geographic location corresponding to a selected data record.

8. A method according to claim 7 wherein said data records correspond to advertising information of a vendor at said geographic location.

10 9. A method according to claim 7 wherein said method further comprises advertising broadcast by voice signal and associated with at least one of said data records.

10. A method according to claim 7 wherein said displaying position step comprises the step of displaying relative  
15 orientation of a direction and magnitude of distance from said current location to said geographic location.

*Sub A3*  
11. A method of providing travel information at a vehicle, the method comprising the steps:

detecting said vehicle position;

20 collecting information relevant to geographic points of interest, said information including a geographic location for each of said geographic points of interest; and

displaying relative to a current location as established in said detecting step a distance to and a direction toward a selected one of said geographic points of interest.

12. A method according to claim 11 wherein said method  
5 further comprises the steps:

maintaining a plurality of data records, each corresponding to information taken from said collecting step and relevant to a geographic point of interest; and

reviewing said plurality of data records while concurrently  
10 executing said display step relative to a data record currently under review taking into account a then-current vehicle location.

13. A method according to claim 11 wherein said collecting step comprises the steps:

monitoring by an operator of the travel information device a  
15 voice broadcast; and

actuating by an operator said travel information device to capture information in an associated data broadcast.

14. A method according to claim 11 wherein said step of detecting said vehicle position is by satellite transmission.

08/585604

DUAL CHANNEL ADVERTISING REFERENCING VEHICLE LOCATION

Abstract of the Disclosure

A vehicle information device and collects information concerning specific geographic points of interest. The operator  
5 recalls for display such information, including a display showing direction and distance of travel to a designated geographic point of interest relative to a then-current vehicle location. Dual channel advertising is transmitted by voice broadcast and by data broadcast. Upon hearing in the voice broadcast an advertisement  
10 of interest, the operator captures the associated data broadcast including, among other detailed text message information, the location of the advertiser. Distance and relative direction of travel from the current vehicle location to the geographic point of interest is thereby presented. Multiple geographic points of  
15 interest are stored for selective review whereby the user constructs a database containing locations of particular interest to a particular person.

**POWER OF ATTORNEY**

Commissioner of Patents and Trademarks  
Washington, D. C. 20231  
Sir:

Seiko Telecommunications Systems Inc. is the assignee of the patent application filed herewith and identified as.

**Title: DUAL CHANNEL ADVERTISING REFERENCING VEHICLE LOCATION**  
**Inventor: Michael C. Park**  
**Docket: P126**

Seiko Telecommunication Systems Inc. as assignee hereby appoints the following attorney to prosecute this application and to transact all business connected therewith in the U. S. Patent and Trademark Office.

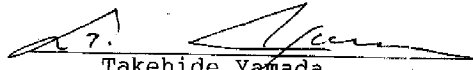
<u>Name</u>	<u>Reg. No.</u>
Elmer W. Galbi	\ 19,761
Keith Cushing	\ 32,407

Send all correspondence to:

Elmer W. Galbi, Esq.  
Seiko Telecommunication Systems Inc.  
9205 S.W. Gemini Drive, Bld 140  
Beaverton, OR 97006

Direct telephone calls to: Elmer W. Galbi 503-531-1516

Date 6/27/94

  
Takehide Yamada  
Vice President  
Seiko Telecommunication Systems Inc.

285913

DECLARATION BY INVENTOR

As the below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name,

I believe that I am an original, first and sole inventor of the subject matter which is claimed and for which a patent is sought on the invention,

Entitled: DUAL CHANNEL ADVERTISING REFERENCING VEHICLE LOCATION

Docket Number: P-126

the specification of which is attached hereto.

I hereby state that I have reviewed and understand the contents of the above identified specifications, including the claims.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations 1.56(a).

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made, with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

CLAIM OF PRIORITY BASED ON FOREIGN APPLICATIONS: NONE

CLAIM OF PRIORITY BASED ON PREVIOUSLY FILED U.S. APPLICATIONS: NONE

Michael C. Park  
Inventor name

USA  
Citizenship

Michael C. Park  
Signature

7/29/77  
Date

9665 S.W. Melnore Street  
Portland, Oregon 97225

Post Office Address and Residence

OR

00/282893  
585604

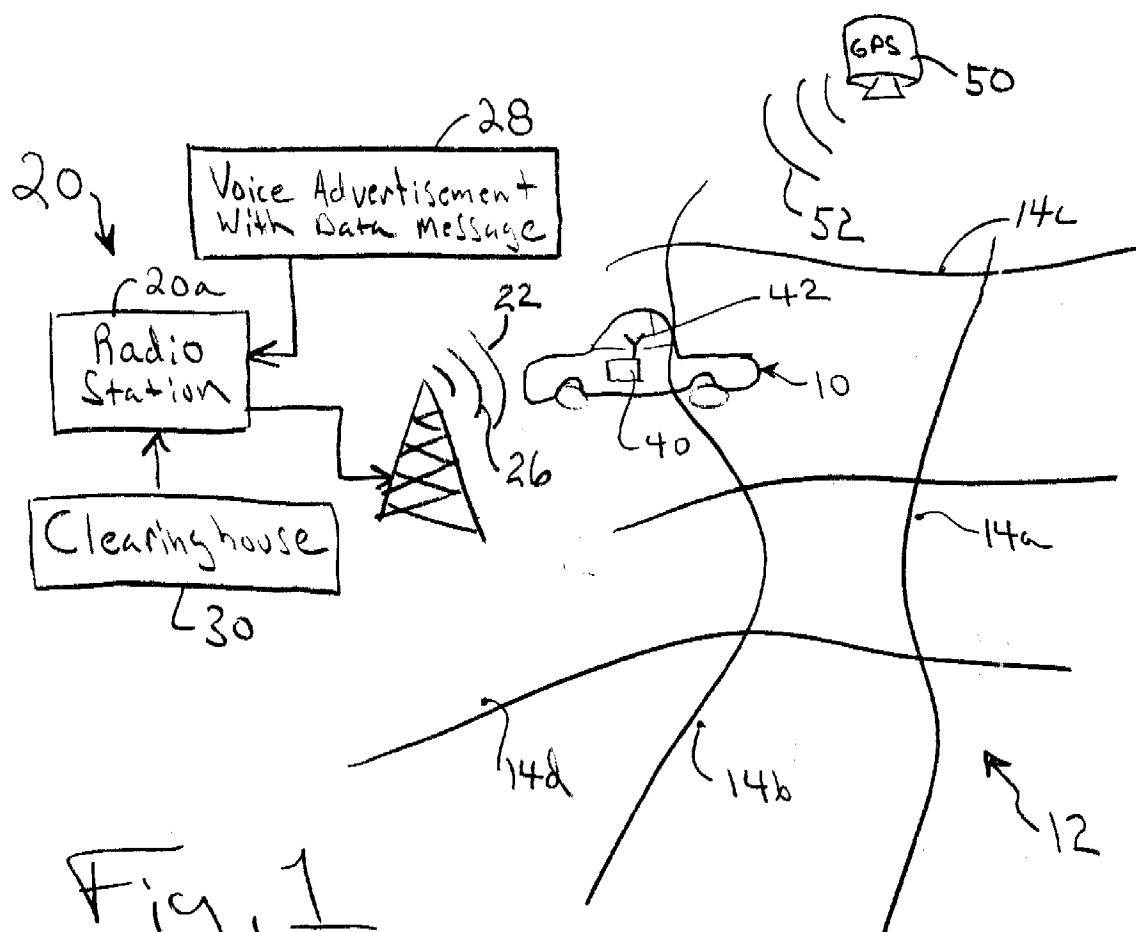


Fig. 1

7  
Figs

00/282893  
585604

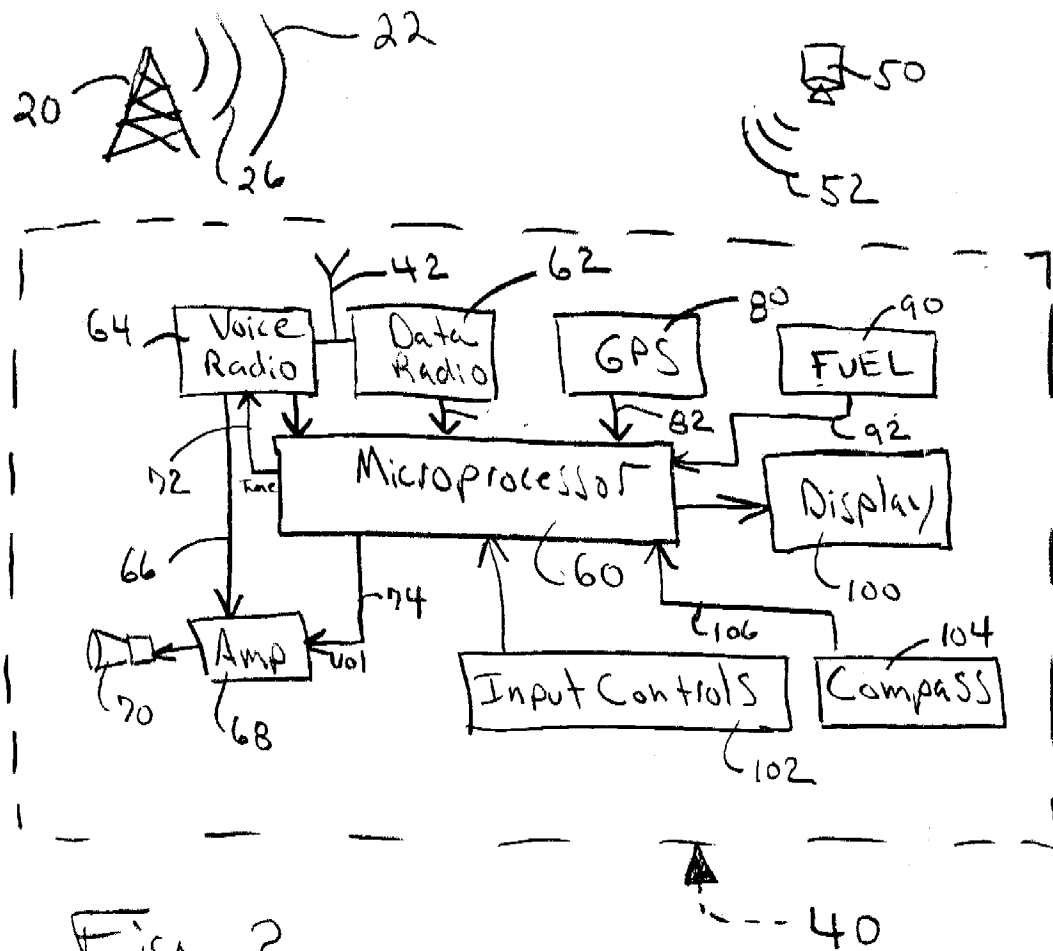


Fig. 2



08/282893

585,604

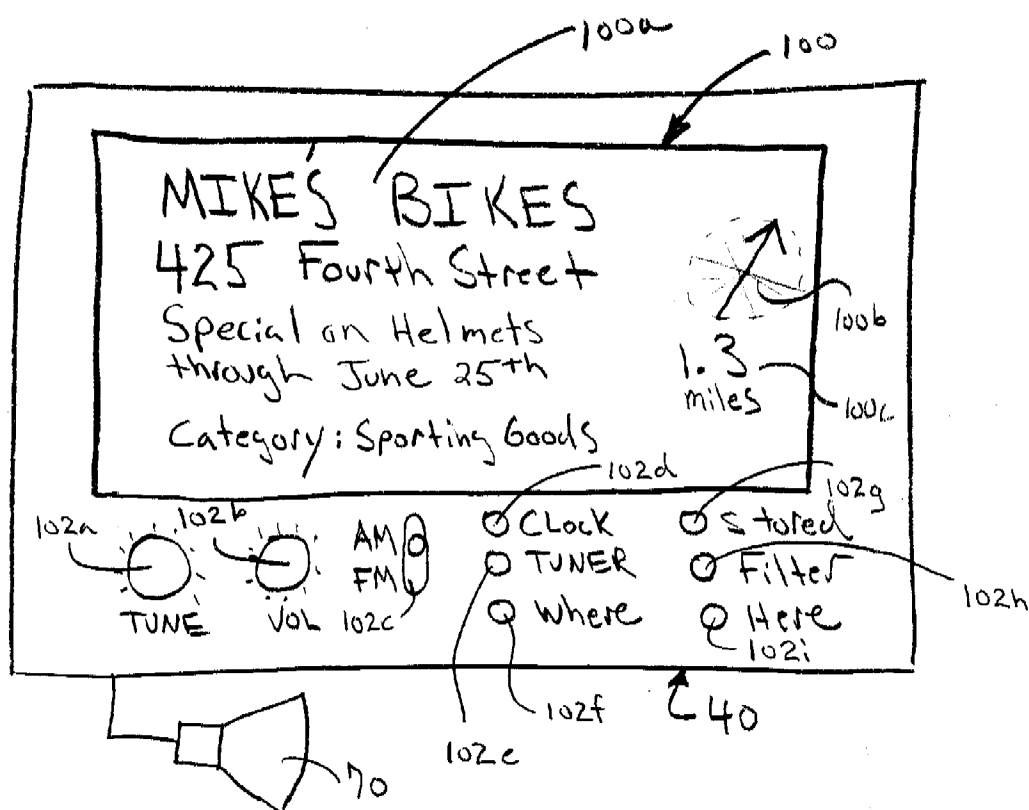


Fig. 3

00/282893

585,604

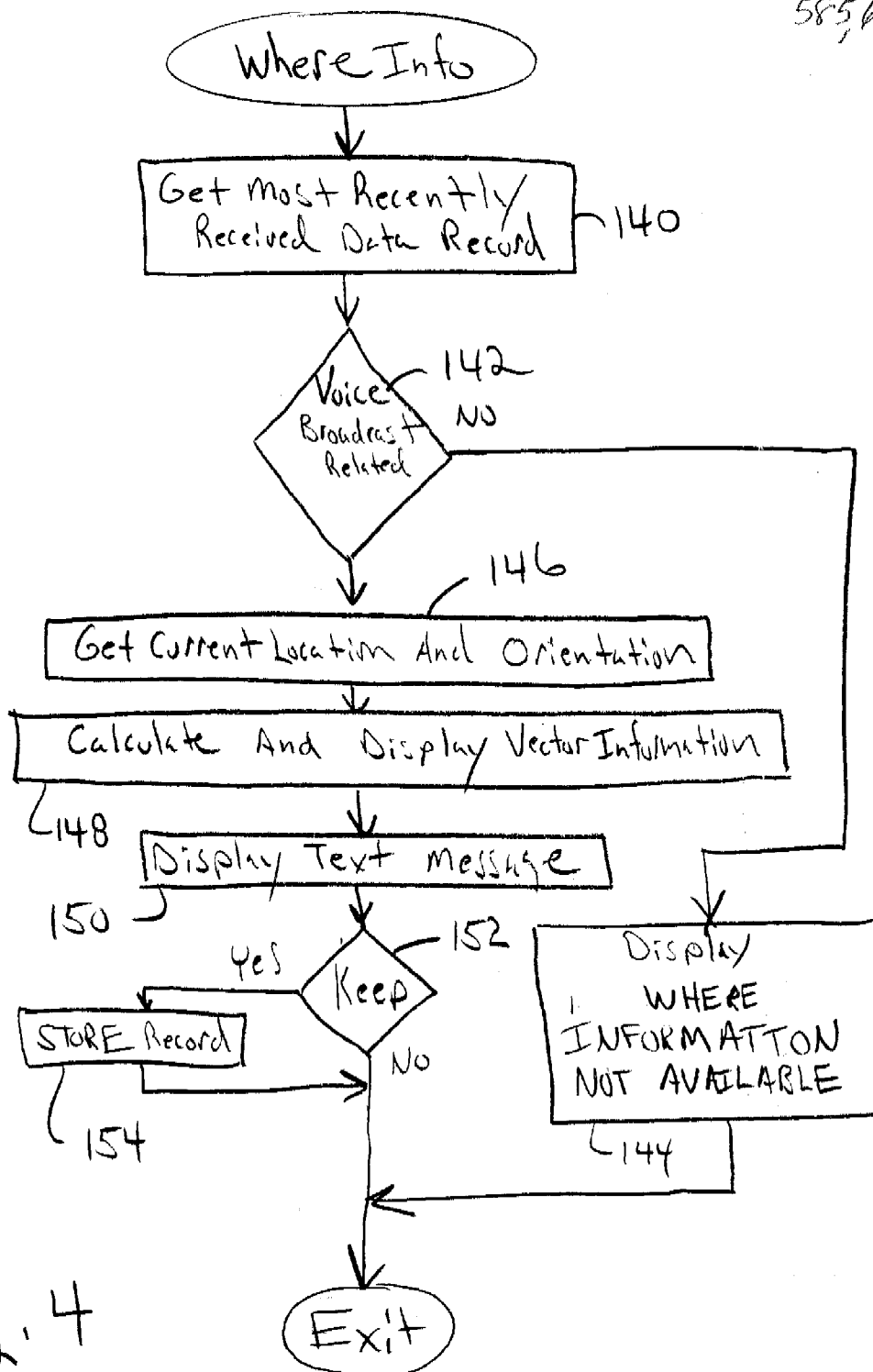


Fig. 4

08/282893  
585604

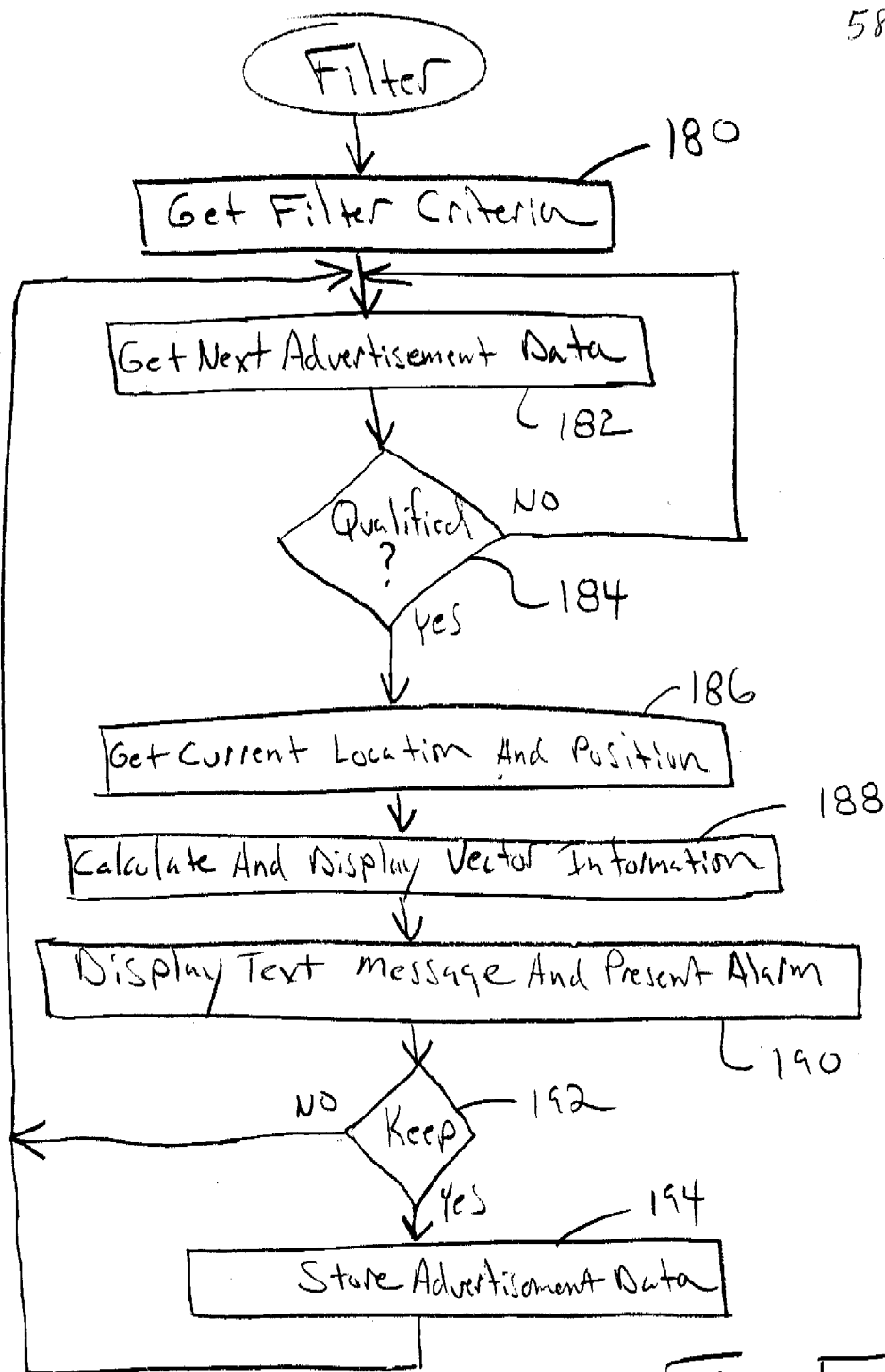


Fig. 5

00/282893  
583,004

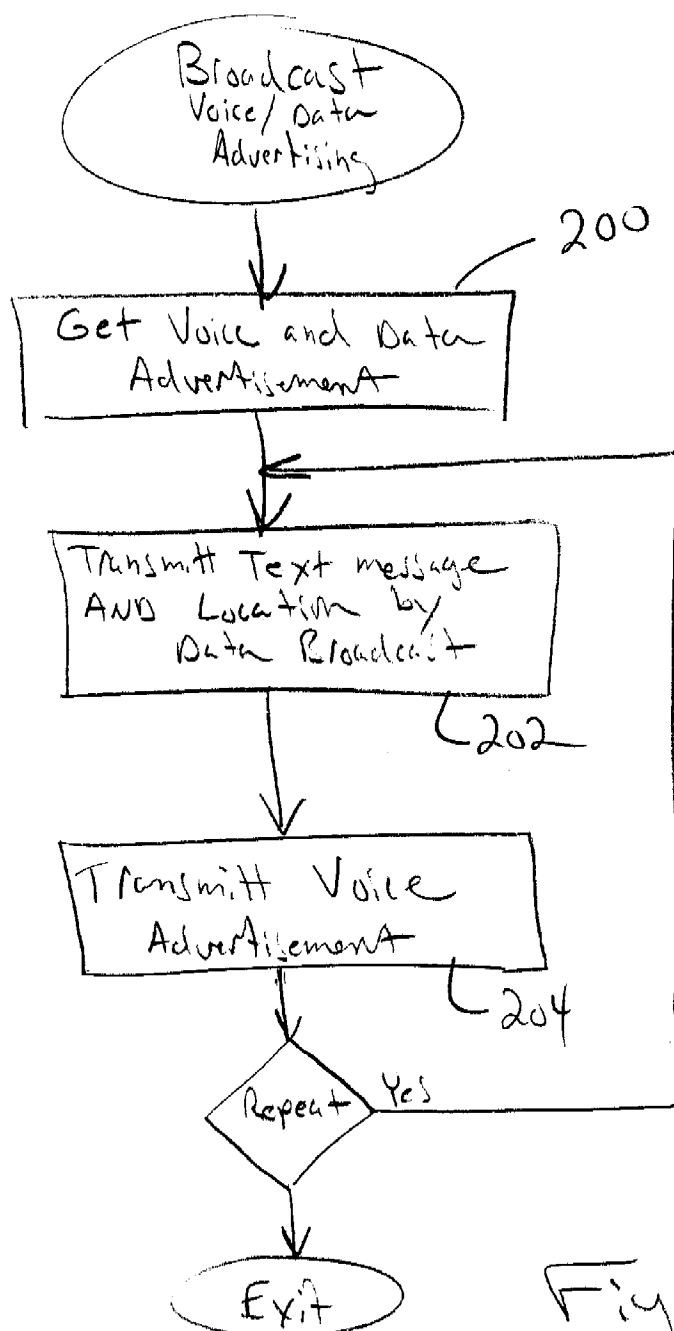


Fig. 6

282893  
585,604

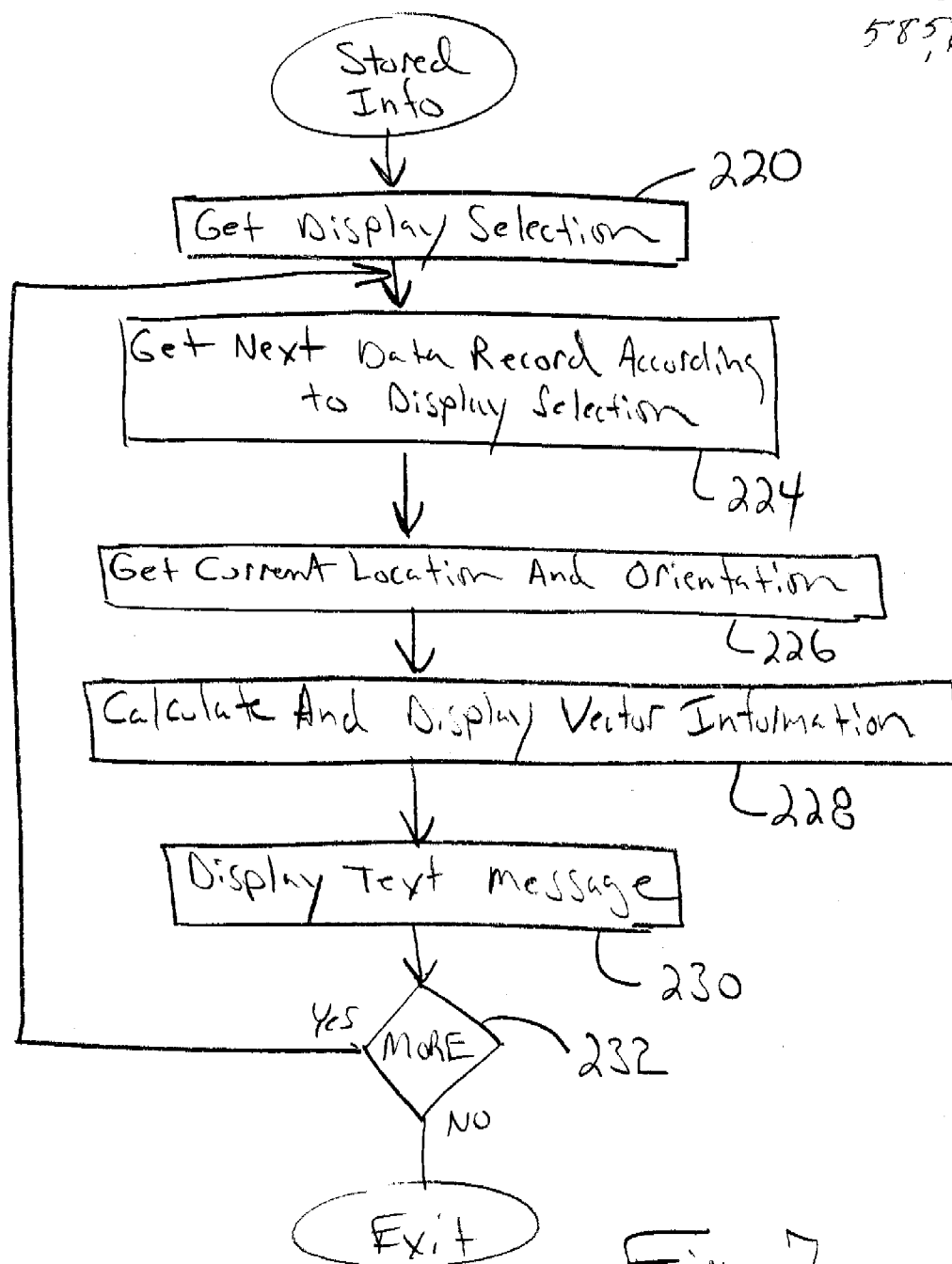


Fig. 7

42  
3571

Blum

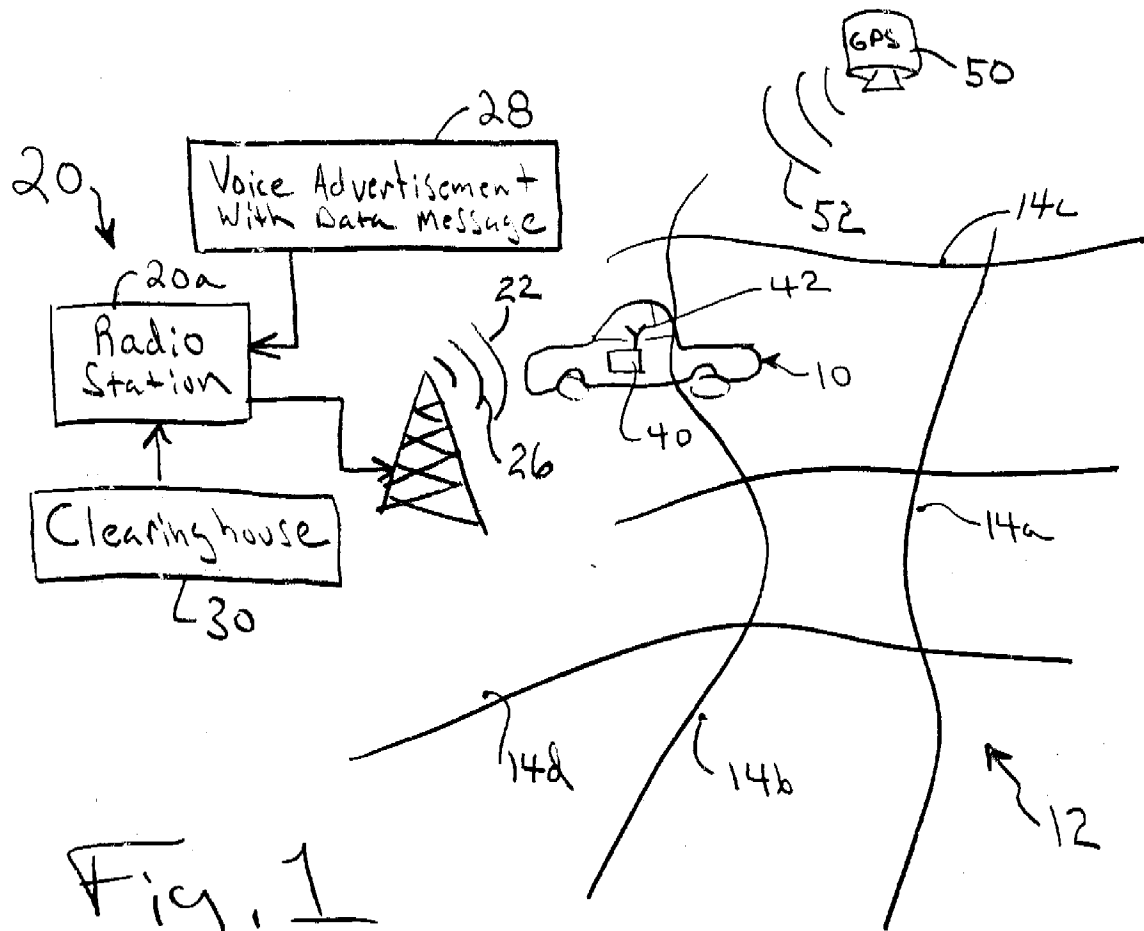


Fig. 1

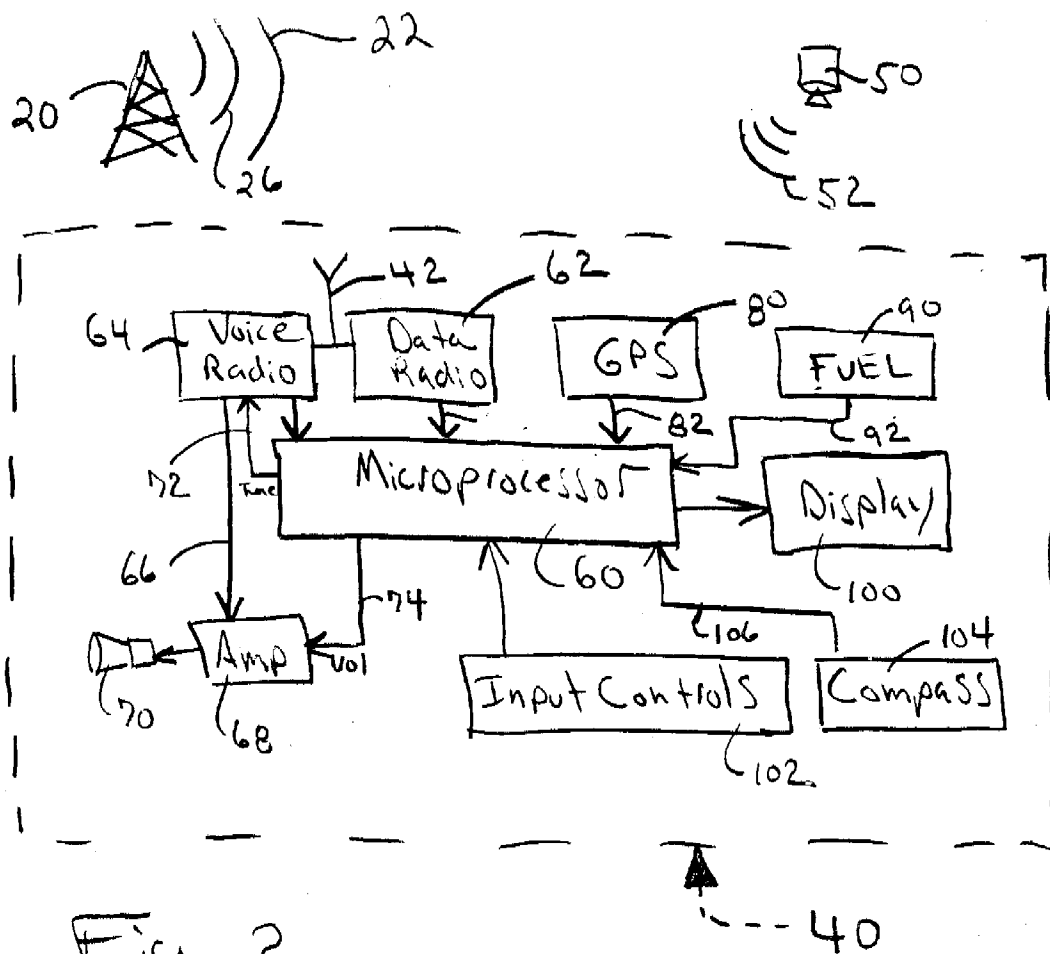


Fig. 2





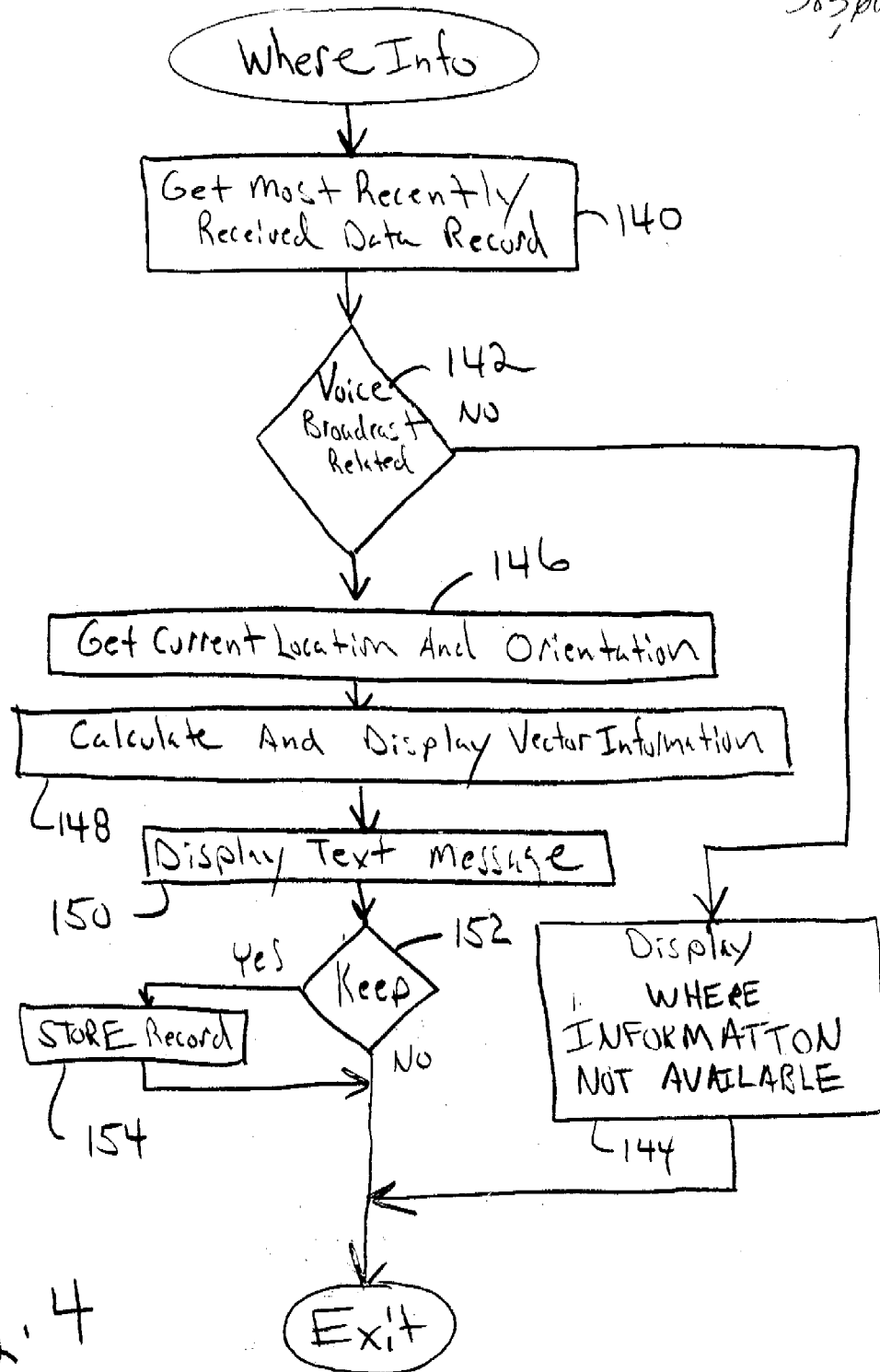


Fig. 4

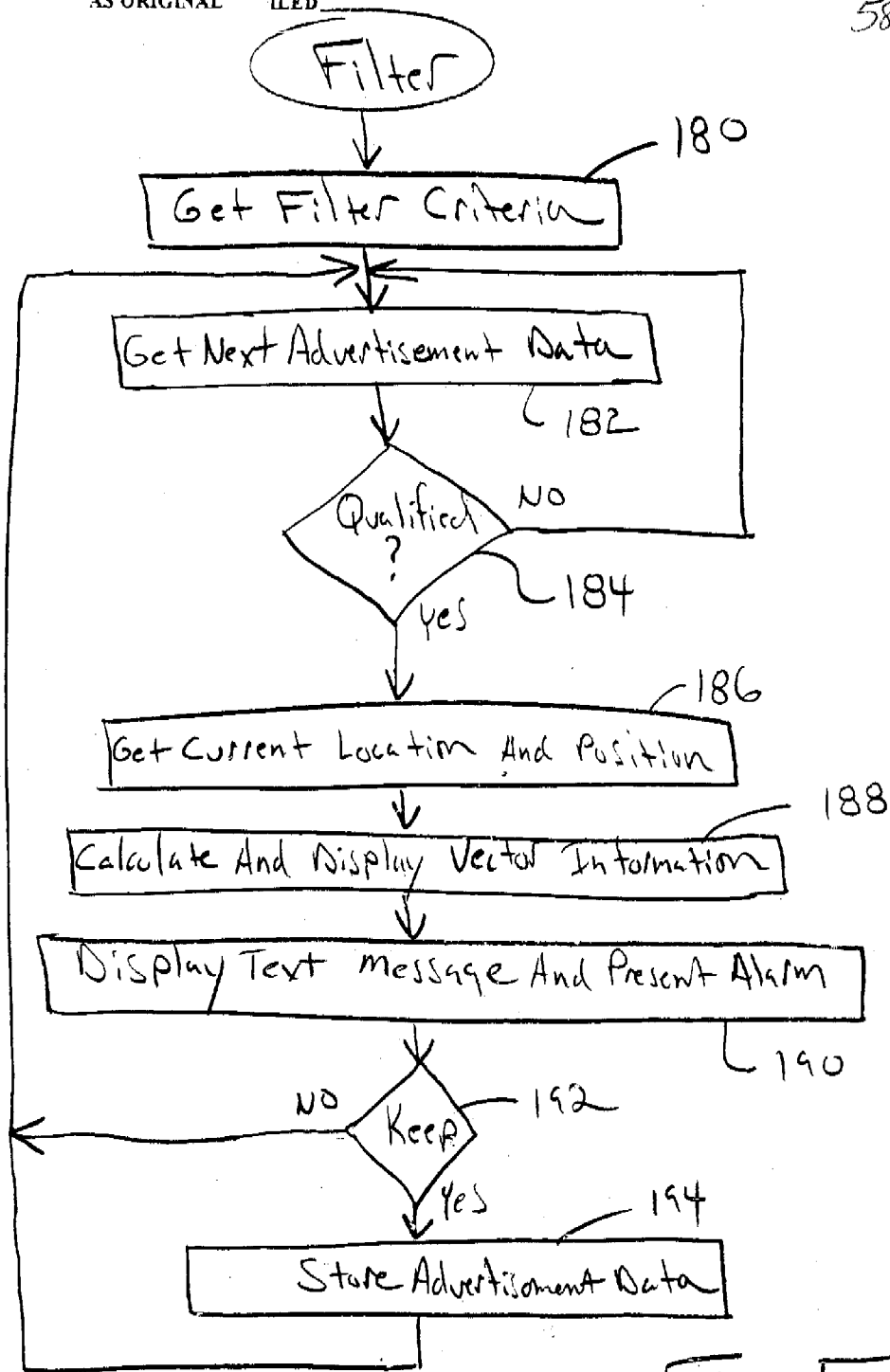


Fig. 5

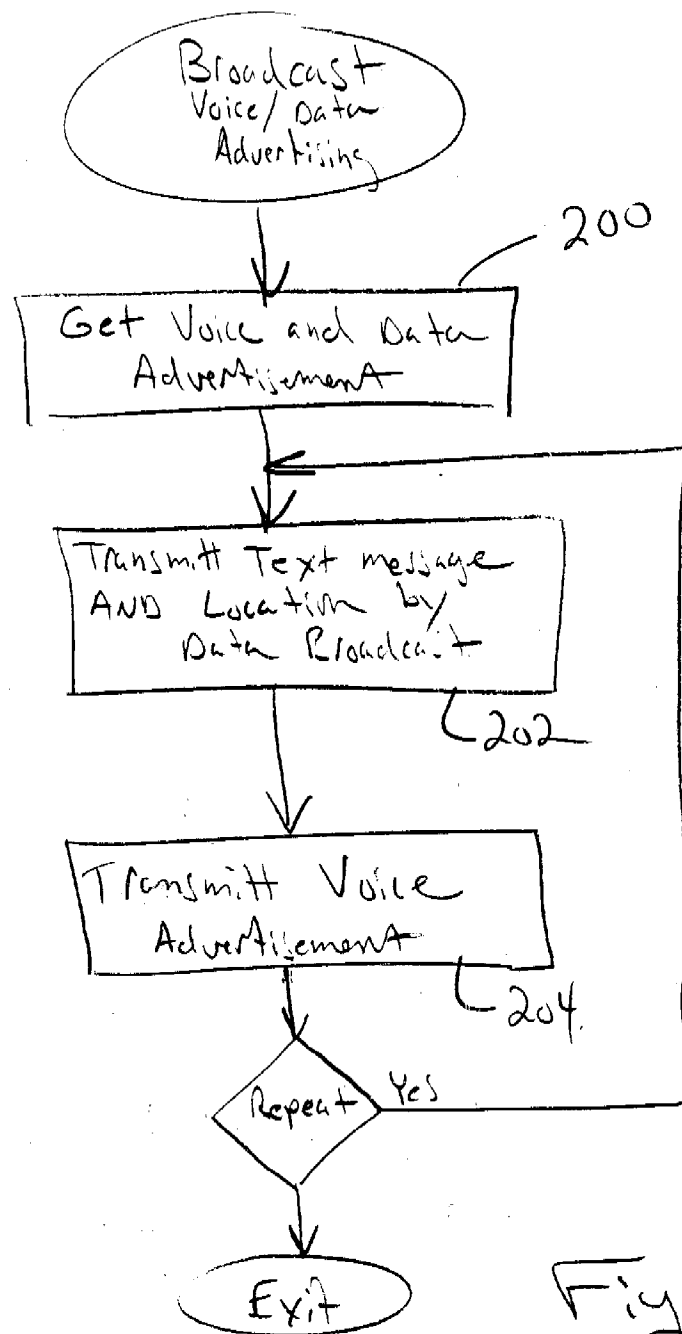


Fig. 6

8/5/64

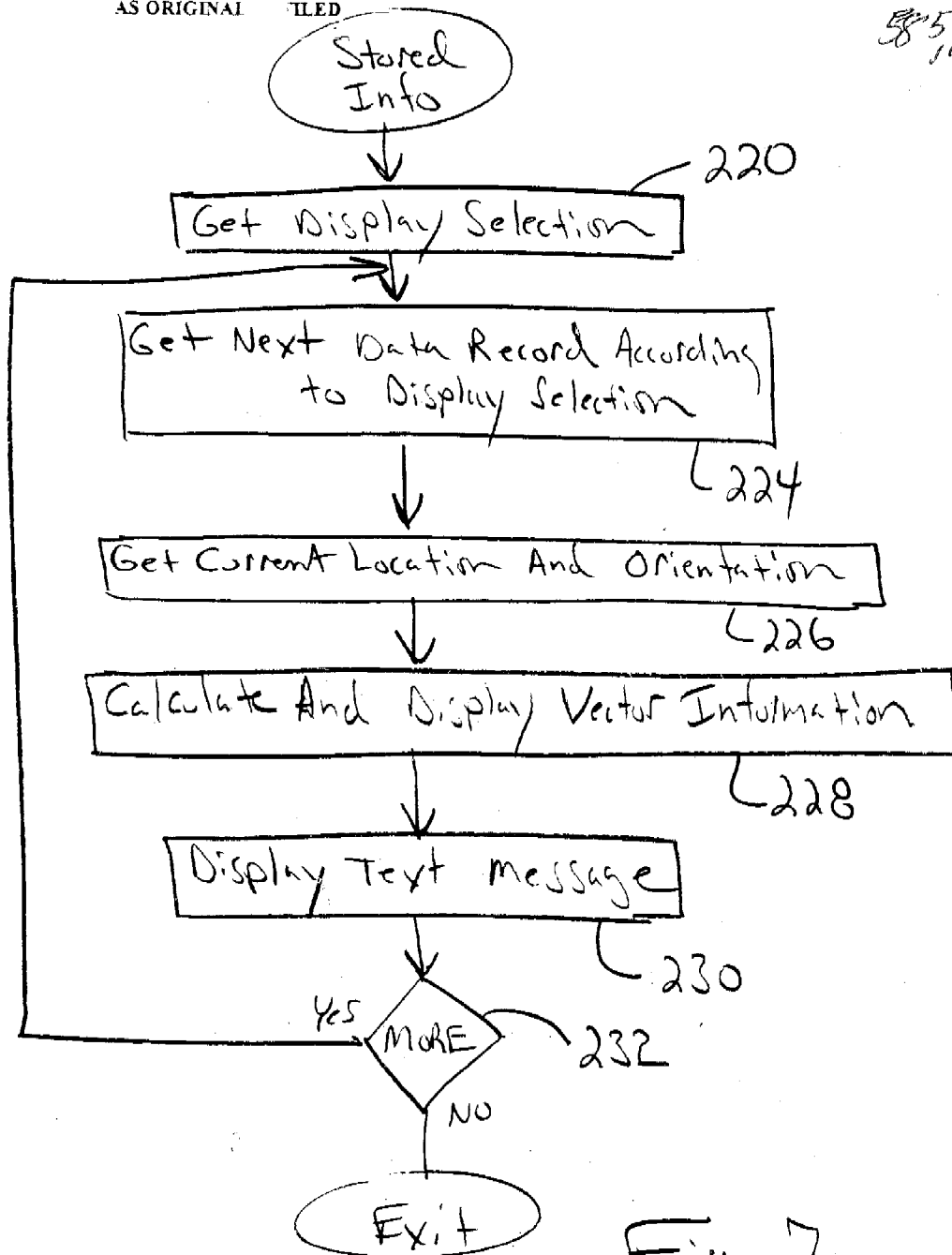


Fig. 7



00/282893

## KEITH A. CUSHING

Registered Patent Attorney  
4201 S.W. VACUNA STREET  
PORTLAND, OREGON 97219  
(503) 245-2558

July 29, 1994

Commissioner of Patents  
and Trademarks  
Washington, D.C. 20231

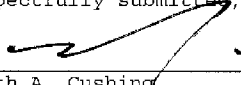
Dear Sir:

Enclosed herewith for filing by Express Mail is an application for U. S. Letters Patent, including:

26 pages Specification  
1 pages Abstract  
14 Claims  
7 sheets of Drawings  
Declaration  
Filing Fee Check (\$710.00)  
Postcard  
Power of Attorney  
Assignment  
Check in the amount of \$40.00  
Assignment Cover Sheet  
For: DUAL CHANNEL ADVERTISING REFERENCING VEHICLE LOCATION  
P-126  
Inventor: Michael C. Park

This application is being filed by Express Mail and a filing date of July 29, 1994 is requested.

Respectfully submitted,


  
Keith A. Cushing  
Attorney for Applicant  
Reg. No. 32,407

### CERTIFICATE OF MAILING - EXPRESS MAIL

I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being deposited with the U. S. Postal Service as Express Mail No. **EF310161589 US**, in an envelope addressed to: Commissioner of Patents and Trademarks, Washington, D.C. on the date indicated below.

Date

7/29/94

  
Keith A. Cushing  
Attorney of Record  
Reg. No. 32,407

Cy 220



I hereby certify that on 7/26 1994  
this document is being deposited with the  
United States Postal Service as FIRST CLASS MAIL  
addressed to The Commissioner of Patents and  
Trademarks, Washington, DC 20231  
by: Elmer Galbi  
Elmer Galbi Reg. No 19,761

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In Re Application:  
Inventor: Michael C. Park

Art Unit: 2202  
Examiner:

Serial No.: 08/282,893

Filed: 07/29/94

Title: Dual Channel Advertising  
Reference Vehicle  
Location

Docket: P126

Date of this paper: September 26, 1994

Change of Address Notice #2 T.W.  
10-7-94

Commissioner of Patents and Trademarks  
Washington, D. C. 20231

Sir:

Please note that the address of applicant's attorney has been changed.

All future correspondence should be addressed to:

Elmer Galbi  
Seiko Telecommunication Systems Inc.  
1625 N.W. Amber Glen Court, Suite 140  
Beaverton, OR 97006  
Phone contact number 503 531-1516

Respectfully submitted,

Elmer Galbi  
Elmer Galbi, Reg. No 19,761  
Attorney for Applicant  
Seiko Telecommunication Systems Inc.  
1625 N.W. Amber Glen Court, Suite 140  
Beaverton, OR 97006  
Phone contact number 503 531-1516



**UNITED STATES DEPARTMENT OF COMMERCE  
Patent and Trademark Office**

Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231

SERIAL NUMBER	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
---------------	-------------	----------------------	---------------------

08/282,893 07/29/94 PARK

M P126

BLUM, T EXAMINER

22M2/0321

ELMER W GALBI  
SEIKO TELECOMMUNICATION SYSTEMS INC  
1625 N.W. AMBER GLEN COURT,  
SUITE 140  
BEAVERTON OR 97006

ART UNIT	PAPER NUMBER
----------	--------------

2202

3

DATE MAILED: 03/21/95

This is a communication from the examiner in charge of your application.  
COMMISSIONER OF PATENTS AND TRADEMARKS

- ☒ This application has been examined ☐ Responsive to communication filed on \_\_\_\_\_ ☐ This action is made final.

A shortened statutory period for response to this action is set to expire 3 month(s), \_\_\_\_\_ days from the date of this letter.  
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

**Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:**

- |   |  |
|---|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited by Examiner, PTO-892. | 2. <input checked="" type="checkbox"/> Notice re Patent Drawing, PTO-948.        |
| 3. <input type="checkbox"/> Notice of Art Cited by Applicant, PTO-1449.                 | 4. <input type="checkbox"/> Notice of Informal Patent Application, Form PTO-152. |
| 5. <input type="checkbox"/> Information on How to Effect Drawing Changes, PTO-1474.     | 6. <input type="checkbox"/> _____  |

**Part II SUMMARY OF ACTION**

1. ☒ Claims 1-14 are pending in the application.  
Of the above, claims \_\_\_\_\_ are withdrawn from consideration.
2. ☐ Claims \_\_\_\_\_ have been cancelled.
3. ☐ Claims \_\_\_\_\_ are allowed.
4. ☒ Claims 1-14 are rejected.
5. ☐ Claims \_\_\_\_\_ are objected to.
6. ☐ Claims \_\_\_\_\_ are subject to restriction or election requirement.
7. ☐ This application has been filed with informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.
8. ☐ Formal drawings are required in response to this Office action.
9. ☐ The corrected or substitute drawings have been received on \_\_\_\_\_. Under 37 C.F.R. 1.84 these drawings are ☐ acceptable ☐ not acceptable (see explanation or Notice re Patent Drawing, PTO-948).
10. ☐ The proposed additional or substitute sheet(s) of drawings, filed on \_\_\_\_\_ has (have) been ☐ approved by the examiner ☐ disapproved by the examiner (see explanation).
11. ☐ The proposed drawing correction, filed on \_\_\_\_\_, has been ☐ approved ☐ disapproved (see explanation).
12. ☐ Acknowledgment is made of the claim for priority under U.S.C. 119. The certified copy has ☐ been received ☐ not been received  
☐ been filed in parent application, serial no. \_\_\_\_\_; filed on \_\_\_\_\_.
13. ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.
14. ☐ Other

EXAMINER'S ACTION

Serial Number: 08/282893  
Art Unit: 2202

-2-

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --  
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-14 are rejected under 35 U.S.C. § 102(b) as being anticipated by Kashiwazaki.

Kashiwazaki teaches the claimed method for providing travel information relative to vehicle location including: transmitting information of potential interest (received by 29), determining the current location of the vehicle 20, and displaying the direction and distance from the current vehicle location to the geographic point (Figure 8).

3. The Takanabe et al and Noreen et al patent are cited to show vehicle location systems which include a GPS receiver. Note Figures 3 and 6, and column 4, line 28 of Takanabe et al and columns 10 and 14 of Noreen et al.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Theodore Blum whose telephone number is (703) 308-0481.

March 16, 1995

*Theodore M. Blum*  
THEODORE M. BLUM  
EXAMINER  
GROUP ART UNIT 222



TO SEPARATE, HOLD TOP AND BOTTOM EDGES, SNAP APART AND FORWARD CARBON

FORM PTO-892 (REV. 2-92)		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		SERIAL NO. <b>08/282893</b>	GROUP ART UNIT <b>2202</b>	ATTACHMENT TO PAPER NUMBER <b>3</b>
NOTICE OF REFERENCES CITED				APPLICANT(S) <b>PARK</b>		

U.S. PATENT DOCUMENTS							
•	DOCUMENT NO.	DATE	NAME	CLASS	SUB-CLASS	FILING DATE IF APPROPRIATE	
A	5365449	11-94	KASHIWAZAKI	364	449	9-92	
B	5303393	4-94	NOREEN ET AL	455	12.1		
C	5359527	10-94	TAKANABE ET AL	364	449	10-92	
D							
E							
F							
G							
H							
I							
J							
K							

FOREIGN PATENT DOCUMENTS								
•	DOCUMENT NO.	DATE	COUNTRY	NAME	CLASS	SUB-CLASS	PERTINENT SHTS. DWG. PP. SPEC.	
L								
M								
N								
O								
P								
Q								

OTHER REFERENCES (Including Author, Title, Date, Pertinent Pages, Etc.)	
R	
S	
T	
U	

EXAMINER <b>T. BLUM</b>	DATE <b>3-16-95</b>
----------------------------	------------------------

\* A copy of this reference is not being furnished with this office action.  
(See Manual of Patent Examining Procedure, section 70\* 05 (a).)

08/282893

## NOTICE OF DRAFTSPERSON'S PATENT DRAWING REVIEW

PTO Draftpersons review all originally filed drawings regardless of whether they are designated as formal or informal. Additionally, patent Examiners will review the drawings for compliance with the regulations. Direct telephone inquiries concerning this review to the Drawing Review Branch, 703-305-8404.

The drawings filed (insert date) 2/29/94, are  
 A. ☒ not objected to by the Draftsperson under 37 CFR 1.84 or 1.152.  
 B. ☒ objected to by the Draftsperson under 37 CFR 1.84 or 1.152 as indicated below. The Examiner will require submission of new, corrected drawings when necessary. Corrected drawings must be submitted according to the instructions on the back of this Notice.

1. DRAWINGS. 37 CFR 1.84(a): Acceptable categories of drawings:  
 Black ink. Color.  
☐ Not black solid lines. Fig(s) \_\_\_\_\_  
☐ Color drawings are not acceptable until petition is granted.

2. PHOTOGRAPHS. 37 CFR 1.84(b)  
☐ Photographs are not acceptable until petition is granted.

3. GRAPHIC FORMS. 37 CFR 1.84(d)  
☐ Chemical or mathematical formula not labeled as separate figure. Fig(s) \_\_\_\_\_  
☐ Group of waveforms not presented as a single figure, using common vertical axis with time extending along horizontal axis. Fig(s) \_\_\_\_\_  
☐ Individual waveform not identified with a separate letter designation adjacent to the vertical axis. Fig(s) \_\_\_\_\_

4. TYPE OF PAPER. 37 CFR 1.84(c)  
☐ Paper not flexible, strong, white, smooth, nonshiny, and durable. Sheet(s) \_\_\_\_\_  
☐ Erasures, alterations, overwritings, interlineations, cracks, creases, and folds not allowed. Sheet(s) \_\_\_\_\_

5. SIZE OF PAPER. 37 CFR 1.84(f): Acceptable paper sizes:  
 21.6 cm. by 35.6 cm. (8 1/2 by 14 inches)  
 21.6 cm. by 33.1 cm. (8 1/2 by 13 inches)  
 21.6 cm. by 27.9 cm. (8 1/2 by 11 inches)  
 21.0 cm. by 29.7 cm. (DIN size A4)  
☐ All drawing sheets not the same size. Sheet(s) \_\_\_\_\_  
☐ Drawing sheet not an acceptable size. Sheet(s) \_\_\_\_\_

6. MARGINS. 37 CFR 1.84(g): Acceptable margins:

Paper size			
21.6 cm. X 35.6 cm. (8 1/2 X 14 inches)	21.6 cm. X 33.1 cm. (8 1/2 X 13 inches)	21.6 cm. X 27.9 cm. (8 1/2 X 11 inches)	21.0 cm. X 29.7 cm. (DIN Size A4)
T 5.1 cm. (2")	2.5 cm. (1")	2.5 cm. (1")	2.5 cm.
L .64 cm. (1/4")	.64 cm. (1/4")	.64 cm. (1/4")	2.5 cm.
R .64 cm. (1/4")	.64 cm. (1/4")	.64 cm. (1/4")	1.5 cm.
B .64 cm. (1/4")	.64 cm. (1/4")	.64 cm. (1/4")	1.0 cm.

Margins do not conform to chart above.

Sheet(s) A, 5, 7  
 Top (T) \_\_\_\_\_ Left (L) \_\_\_\_\_ Right (R) \_\_\_\_\_ Bottom (B) \_\_\_\_\_

7. VIEWS. 37 CFR 1.84(h)  
 REMINDER: Specification may require revision to correspond to drawing changes.

- ☐ All views not grouped together. Fig(s) \_\_\_\_\_  
☐ Views connected by projection lines. Fig(s) \_\_\_\_\_  
☐ Views contain center lines. Fig(s) \_\_\_\_\_

- Partial views. 37 CFR 1.84(h)(2)

- ☐ Separate sheets not linked edge to edge. Fig(s) \_\_\_\_\_  
☐ View and enlarged view not labeled separately. Fig(s) \_\_\_\_\_  
☐ Long view relationship between different parts not clear and unambiguous. 37 CFR 1.84(h)(2)(ii) Fig(s) \_\_\_\_\_

- Sectional views. 37 CFR 1.84(h)(3)

- ☐ Hatching not indicated for sectional portions of an object. Fig(s) \_\_\_\_\_  
☐ Hatching of regularly spaced oblique parallel lines not spaced sufficiently. Fig(s) \_\_\_\_\_  
☐ Hatching not at substantial angle to surrounding axes or principal lines. Fig(s) \_\_\_\_\_  
☐ Cross section not drawn same as view with parts in cross section with regularly spaced parallel oblique strokes. Fig(s) \_\_\_\_\_  
☐ Hatching of juxtaposed different elements not angled in a different way. Fig(s) \_\_\_\_\_

- Alternate position. 37 CFR 1.84(h)(4)

- ☐ A separate view required for a moved position. Fig(s) \_\_\_\_\_

- Modified forms. 37 CFR 1.84(h)(5)

- ☐ Modified forms of construction must be shown in separate views. Fig(s) \_\_\_\_\_

8. ARRANGEMENT OF VIEWS. 37 CFR 1.84(i)

- ☐ View placed upon another view or within outline of another. Fig(s) \_\_\_\_\_  
☐ Words do not appear in a horizontal, left-to-right fashion when page is either upright or turned so that the top becomes the right side, except for graphs. Fig(s) \_\_\_\_\_

9. SCALE. 37 CFR 1.84(k)

- ☐ Scale not large enough to show mechanism without crowding when drawing is reduced in size to two-thirds in reproduction. Fig(s) \_\_\_\_\_  
☐ Indication such as "actual size" or "scale 1/2" not permitted. Fig(s) \_\_\_\_\_  
☐ Elements of same view not in proportion to each other. Fig(s) \_\_\_\_\_

10. CHARACTER OF LINES, NUMBERS, & LETTERS. 37 CFR 1.84(l)

- ☒ Lines, numbers & letters not uniformly thick and well defined, clean, durable, and black (except for color drawings). Fig(s) E, F

11. SHADING. 37 CFR 1.84(m)

- ☐ Shading used for other than shape of spherical, cylindrical, and conical elements of an object, or for flat parts. Fig(s) \_\_\_\_\_  
☐ Solid black shading areas not permitted. Fig(s) \_\_\_\_\_

12. NUMBERS, LETTERS, & REFERENCE CHARACTERS. 37 CFR 1.84(p)

- ☒ Numbers and reference characters not plain and legible. 37 CFR 1.84(p)(1) Fig(s) E, F  
☐ Numbers and reference characters used in conjunction with brackets, inverted commas, or enclosed within outlines. 37 CFR 1.84(p)(1) Fig(s) \_\_\_\_\_  
☐ Numbers and reference characters not oriented in same direction as the view. 37 CFR 1.84(p)(1) Fig(s) \_\_\_\_\_  
☐ English alphabet not used. 37 CFR 1.84(p)(2) Fig(s) \_\_\_\_\_  
☒ Numbers, letters, and reference characters do not measure at least .32 cm. (1/8 inch) in height. 37 CFR 1.84(p)(3) Fig(s) 1-7 in part

13. LEAD LINES. 37 CFR 1.84(q)

- ☐ Lead lines cross each other. Fig(s) \_\_\_\_\_  
☐ Lead lines missing. Fig(s) \_\_\_\_\_  
☐ Lead lines not as short as possible. Fig(s) \_\_\_\_\_

14. NUMBERING OF SHEETS OF DRAWINGS. 37 CFR 1.84(r)

- ☐ Number appears in top margin. Fig(s) \_\_\_\_\_  
☐ Number not larger than reference characters. Fig(s) \_\_\_\_\_  
☐ Sheets not numbered consecutively, and in Arabic numerals, beginning with number 1. Sheet(s) \_\_\_\_\_

15. NUMBER OF VIEWS. 37 CFR 1.84(u)

- ☐ Views not numbered consecutively, and in Arabic numerals, beginning with number 1. Fig(s) \_\_\_\_\_  
☐ View numbers not preceded by the abbreviation Fig. Fig(s) \_\_\_\_\_  
☐ Single view contains a view number and the abbreviation Fig. Fig(s) \_\_\_\_\_  
☐ Numbers not larger than reference characters. Fig(s) \_\_\_\_\_

16. CORRECTIONS. 37 CFR 1.84(w)

- ☐ Corrections not durable and permanent. Fig(s) \_\_\_\_\_

17. DESIGN DRAWING. 37 CFR 1.152

- ☐ Surface shading shown not appropriate. Fig(s) \_\_\_\_\_  
☐ Solid black shading not used for color contrast. Fig(s) \_\_\_\_\_



UNITED STATES DEPARTMENT OF COMMERCE  
Patent and Trademark Office

Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231

SERIAL NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NO.
08/282893	7-29-94	PARK	P126

EXAMINER	
T. BLUM	
ART UNIT	PAPER NUMBER
2202	4

DATE MAILED:

EXAMINER INTERVIEW SUMMARY RECORD

All participants (applicant, applicant's representative, PTO personnel):

(1) MR. GALBI (3)  
(2) MR. BLUM (4)

Date of interview 7-6-95

Type: ☐ Telephonic ☒ Personal (copy is given to ☐ applicant ☒ applicant's representative).

Exhibit shown or demonstration conducted: ☐ Yes ☒ No. If yes, brief description:

Agreement ☐ was reached with respect to some or all of the claims in question. ☒ was not reached.

Claims discussed: 1, 7, 11

Identification of prior art discussed: all

Description of the general nature of what was agreed to if an agreement was reached, or any other comments:

The last office action was discussed.

(A fuller description, if necessary, and a copy of the amendments, if available, which the examiner agreed would render the claims allowable must be attached. Also, where no copy of the amendments which would render the claims allowable is available, a summary thereof must be attached.)

Unless the paragraphs below have been checked to indicate to the contrary, A FORMAL WRITTEN RESPONSE TO THE LAST OFFICE ACTION IS NOT WAIVED AND MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW (e.g., items 1-7 on the reverse side of this form). If a response to the last Office action has already been filed, then applicant is given one month from this interview date to provide a statement of the substance of the interview.

☐ It is not necessary for applicant to provide a separate record of the substance of the interview.

☐ Since the examiner's interview summary above (including any attachments) reflects a complete response to each of the objections, rejections and requirements that may be present in the last Office action, and since the claims are now allowable, this completed form is considered to fulfill the response requirements of the last Office action.

Theodore M. Blum

Examiner's Signature



RECEIVED

JUL 13 1995

GROUP 2200

I hereby certify that on June 15, 1995 this document is being deposited with the United States Postal Service as **FIRST CLASS MAIL** addressed to the Commissioner of Patents and Trademarks, Washington, D.C. 20231.

By: Elmer Galbi

Elmer Galbi, Reg. No. 19,761  
Seiko Communications Systems Inc.  
1625 NW AmberGlen Court, #140,  
Beaverton, OR 97006 Telephone 503-531-1646

RECEIVED

JUL 13 1995

GROUP 2200

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application:

Serial Number: 08/282,893

Filing Date: 07/29/79

Inventor(s) : Michael C. Park

Title: Dual Channel Advertising Referencing  
Vehicle Location

Art Group: 2202

Examiner: BLUM, T

Date of this paper: June 15, 1995

## Amendment

Responsive to Office Action Dated 03/21/95

Commissioner of Patents and Trademarks  
Box: Non-Fee Amendment  
Washington, D.C. 20231

Dear Sir:

Please amend the claims in the subject application as follows:

Cancel claims ~~2-6~~ and 8-10 and 12-14.

Amend claims 1, 7 and 14 as follows:

(see next page)

1. (amended) A method for providing travel information relative to vehicle location, the method comprising the steps:

transmitting information of potential interest, said information of potential interest including records, each record including at least a location corresponding to a geographic point;

receiving at travel information devices said information of potential interest;

determining at each travel information device a current location therefor; and

means for selecting at each travel information device ones of said records for display, said selection being based on the location of said vehicle said display including indication of direction and distance to the corresponding geographic point in relation to said current location for said travel information device.

7. (amended) A method of operating a travel information device carried by a vehicle along a travel route, the method comprising the steps:

receiving data records by radio signal, each data record corresponding to a potential point of interest along a travel route and including at least a geographic location for said potential point of interest;

[selecting and] storing [nes of] said data records;

selecting for display records depending upon the location of said vehicle;

calculating current location for said travel information device; and

displaying position relative to said current location of a geographic location corresponding to a selected data record.

11 (amended). A method of providing travel information at a vehicle, the method comprising the steps:

detecting said vehicle position;

collecting [information] records relevant to geographic points of interest, said information including a geographic location for each of said geographic points of interest;

selecting for display records based upon the relative location of said vehicle and the location of the geographic point in the selected record; and

displaying relative to a current location as established in said detecting step a distance to and a distance toward a selected one of said geographic points of interest.

#### REMARKS:

This amendment is responsive to the Office Action dated 03/21/21. Claims 2-6 and 8-10 and 12-14 have been canceled in order to simplify the issues. The inventions previously covered by these claims are covered by remaining claims Claims 1, 7 and 11 which are the only claims which remain in this application. Reconsideration and allowance of claims 1, 7 and 11 as amended is requested for the following reasons:

The subject application was rejected under 35 U.S.C. § 102(b) based upon Kashiwazaki (Patent 5,365,449). Kashiwazaki shows a system which detects the present location of a vehicle, displays a map, and displays information related to a particular destination.

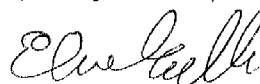
The embodiment shown in Figure 10 includes a receiver (29) which receives by radio a schedule "for sight-seeing a set of famous places in one district" (see column 7 lines 35 et seq of the reference).

In contrast to the above, the system shown and claimed in the present application receives by radio, advertisements concerning various business establishments. When the system detects that it is in the vicinity of one of these establishments, the information concerning that establishment is displayed. The key difference is that with the present invention there is no specification of a destination, route or schedule (as there is in the the system shown in the Kashiwazaki reference). With the present invention the records transmitted to the system are stored and as the vehicle goes past an establishment which has a corresponding record stored, the information concerning that establishment is automatically displayed. Thus, it is in the manner that records are selected for display that the present invention differs from the system shown in the Kashiwazaki reference. The applicant's claims have been amended to focus more clearly on applicant's technique for selecting records for display.

The examiner also cited the Takanabe and Noreen references; however, there was no rejection based on these references. These references merely show vehicle locating systems. They do not show the record display system shown and claimed by the applicant.

Since the references do not show or suggest applicant's invention, reconsideration of claims 1, 7 and 1 as amended is respectfully requested.

Respectfully submitted,



Elmer Galbi Reg No 19,761  
Seiko Communications Systems Inc.  
1625 NW Amber Glen Court #140  
Beaverton, OR 97006

Telephone: 503-531-1516





**UNITED STATES DEPARTMENT OF COMMERCE  
Patent and Trademark Office**

Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231

SERIAL NUMBER	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
08/282,893	07/29/94	PARK	M P126
			BLUM, T EXAMINER
22M2/0718			
ELMER W GALBI SEIKO TELECOMMUNICATION SYSTEMS INC 1625 N.W. AMBER GLEN COURT, SUITE 140 BEAVERTON OR 97006			ART UNIT PAPER NUMBER 2202 6
			DATE MAILED: 07/18/95

This is a communication from the examiner in charge of your application.  
COMMISSIONER OF PATENTS AND TRADEMARKS

- ☐ This application has been examined ☒ Response to communication filed on 6-19-95 ☒ This action is made final.

A shortened statutory period for response to this action is set to expire 3 month(s), \_\_\_\_\_ days from the date of this letter.  
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

**Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:**

- |   |  |
|---|--|
| 1. <input type="checkbox"/> Notice of References Cited by Examiner, PTO-892.        | 2. <input type="checkbox"/> Notice re Patent Drawing, PTO-948.                   |
| 3. <input type="checkbox"/> Notice of Art Cited by Applicant, PTO-1449.             | 4. <input type="checkbox"/> Notice of Informal Patent Application, Form PTO-152. |
| 5. <input type="checkbox"/> Information on How to Effect Drawing Changes, PTO-1474. | 6. <input type="checkbox"/> _____  |

**Part II SUMMARY OF ACTION**

1. ☒ Claims 1, 7, 11 are pending in the application.  
Of the above, claims \_\_\_\_\_ are withdrawn from consideration.
2. ☐ Claims \_\_\_\_\_ have been cancelled.
3. ☐ Claims \_\_\_\_\_ are allowed.
4. ☒ Claims 1, 7, 11 are rejected.
5. ☐ Claims \_\_\_\_\_ are objected to.
6. ☐ Claims \_\_\_\_\_ are subject to restriction or election requirement.
7. ☐ This application has been filed with informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.
8. ☐ Formal drawings are required in response to this Office action.
9. ☐ The corrected or substitute drawings have been received on \_\_\_\_\_. Under 37 C.F.R. 1.84 these drawings are ☐ acceptable. ☐ not acceptable (see explanation or Notice re Patent Drawing, PTO-948).
10. ☐ The proposed additional or substitute sheet(s) of drawings, filed on \_\_\_\_\_ has (have) been ☐ approved by the examiner. ☐ disapproved by the examiner (see explanation).
11. ☐ The proposed drawing correction, filed on \_\_\_\_\_, has been ☐ approved. ☐ disapproved (see explanation).
12. ☐ Acknowledgment is made of the claim for priority under U.S.C. 119. The certified copy has ☐ been received ☐ not been received  
☐ been filed in parent application, serial no. \_\_\_\_\_; filed on \_\_\_\_\_
13. ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.
14. ☐ Other

EXAMINER'S ACTION

Serial Number: 08/282893  
Art Unit: 2202

-2-

1. Claim 1 is rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 is a mixed method and apparatus claim. The method steps are "transmitting", "receiving", and "determining". The apparatus is "means for selecting".

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --  
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 7, and 11, are rejected under 35 U.S.C. § 102(b) as being anticipated by Kashiwazaki.

Kashiwazaki teaches the claimed method for providing travel information relative to vehicle location including:

determining the current location of the vehicle (GPS receiver 20),

transmitting information of potential interest (received by vehicle receiver 29 shown in Figure 10, see column 7, lines 65+) including records (Figure 2),

each record including at least a location corresponding to a geographic point (Figure 2),

Serial Number: 08/282893  
Art Unit: 2202

-3-

selecting at each travel information device (vehicle) ones of said records (Figure 2) for display (Figure 8),

said selection being based on the location of said vehicle (column 8, lines 14-24).

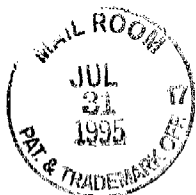
4. Applicant's amendment necessitated the new grounds of rejection. Accordingly, **THIS ACTION IS MADE FINAL**. See M.P.E.P. § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 C.F.R. § 1.136(a).

A SHORTENED STATUTORY PERIOD FOR RESPONSE TO THIS FINAL ACTION IS SET TO EXPIRE THREE MONTHS FROM THE DATE OF THIS ACTION. IN THE EVENT A FIRST RESPONSE IS FILED WITHIN TWO MONTHS OF THE MAILING DATE OF THIS FINAL ACTION AND THE ADVISORY ACTION IS NOT MAILED UNTIL AFTER THE END OF THE THREE-MONTH SHORTENED STATUTORY PERIOD, THEN THE SHORTENED STATUTORY PERIOD WILL EXPIRE ON THE DATE THE ADVISORY ACTION IS MAILED, AND ANY EXTENSION FEE PURSUANT TO 37 C.F.R. § 1.136(a) WILL BE CALCULATED FROM THE MAILING DATE OF THE ADVISORY ACTION. IN NO EVENT WILL THE STATUTORY PERIOD FOR RESPONSE EXPIRE LATER THAN SIX MONTHS FROM THE DATE OF THIS FINAL ACTION.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Theodore Blum whose telephone number is (703) 308-0481.

July 17, 1995

*Theodore M. Blum*  
THEODORE M. BLUM  
EXAMINER  
GROUP ART UNIT 222



I hereby certify that on 7/27, 1995 this document is being deposited with the United States Postal Service as **FIRST CLASS MAIL** addressed to the Commissioner of Patents and Trademarks, Washington, D.C. 20231.

By: Elmer Galbi

Elmer Galbi, Reg. No. 19,761,  
Seiko Communications Systems Inc.  
1625 NW Amber Glen Court, #140  
Beaverton, OR 97006 Telephone 503-531-1516

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re application:

Serial Number: 08/282,893

Filing Date: 07/29/94

Inventor(s) : Michael C. Park

Title: Dual Channel Advertising Referencing Vehicle

Art Group: 2202 AUG 25 1995

Examiner: BLUM GROUP 2200

Docket: P126

Date of this paper: July 27, 1995

7/ **REQUEST FOR CERTIFIED COPY** - *moof*

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

Dear Sir:

Please send a certified copy of the above application to:

Elmer Galbi  
Seiko Communications Systems, Inc.  
1625 N.W. Amber Glen Court, Suite 140  
Beaverton, OR 97006

The undersigned is an attorney of record in the subject application.

Please charge the fee for the above to Deposit Account No. 19-1140 which is the account of Seiko Telecommunication Systems, Inc.

Respectfully submitted,

Elmer Galbi, Reg. No. 19,761  
Seiko Communications Systems, Inc.  
1625 N.W. Amber Glen Court, #140  
Beaverton, OR 97006  
Direct phone calls to: (503)531-1516

I hereby certify that on Nov 13, 1995 this document is being deposited with the United States Postal Service as **FIRST CLASS MAIL** addressed to the Commissioner of Patents and Trademarks, Washington, D.C. 20231.

By: Elmer Galbi

Elmer Galbi, Reg. No. 19,761  
Seiko Communications Systems, Inc.  
1625 NW Amber Glen Court, Suite 140  
Beaverton, OR 97006

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

**In re application:**

**Serial Number:** 08/282,893

**Filing Date:** 07/29/94

**Inventor(s) :** Michael C. Park

**Title:** Dual Channel Advertising Reference  
Vehicle Location

**Art Group:** 2202

**Examiner:** Blum, T.

**Docket:** P126

**Date of this paper:** November 13, 1995

**Petition for an Extension of Time to Respond**

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

Dear Sir:

Applicant petitions for a one month extension of time to respond to the Office Action dated 07/18/95.

An appropriate response to the Office Action (i.e. a Notice of Appeal) is being filed herewith.

Please charge the fee for this petition (\$110.00) and any other appropriate fees in this application to the undersigned's Deposit Account No. 19-1140.

Respectfully submitted,

Elmer Galbi

Elmer Galbi, Reg. No. 19,761  
Seiko Communications Systems, Inc.  
1625 N.W. Amber Glen Court, #140  
Beaverton, OR 97006

Direct phone calls to: (503)531-1516

NO11056 12/12/95 08282893

19-1140 110 115

110.00CH

2202  
I hereby certify that on Nov 13, 1995, this document is being deposited with the United States Postal Service as **FIRST CLASS MAIL** addressed to the Commissioner of Patents and Trademarks, Washington, D.C. 20231.

By: Elmer Galbi  
Elmer Galbi, Reg. No. 19,761  
Seiko Communications Systems, Inc.  
1625 NW Amber Glen Court, Suite 140  
Beaverton, OR 97006

*Notice of Appeal*  
*Cofor*  
*12-27-95*

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application:

Serial Number: 08/282,893

Filing Date: 07/29/94

Inventor(s) : Michael C. Park

Title: Dual Channel Advertising Reference Vehicle Location

Art Group: 2202

Examiner: Blum, T.

Docket: P126

Date of this paper: November 13, 1995

**NOTICE OF APPEAL**

From the Examiner to the Board of Patent Appeals and Interferences.

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

Sir:

Applicant hereby appeals to the Board of Patent Appeals and Interferences from the decision dated 07/18/95 of the Examiner finally rejecting claims 1, 7 and 11 of the above identified application.

Please charge the fee for this Notice of Appeal (i.e. \$290.00) and any additional applicable fees to the undersigned's **Deposit Account** No. 19-1140 which is in the name of Seiko Telecommunication Systems Inc.

Respectfully submitted,

Elmer Galbi  
Elmer Galbi, Reg. No. 19,761  
Seiko Communications Systems, Inc.  
1625 N.W. Amber Glen Court, #140  
Beaverton, OR 97006  
Direct phone calls to: (503)531-1516

MG11057 12/12/95 08282893

19-1140 110 119

290.00CH

08/585604

PATENT APPLICATION SERIAL NO. \_\_\_\_\_

U.S. DEPARTMENT OF COMMERCE  
PATENT AND TRADEMARK OFFICE  
FEE RECORD SHEET

P 30119 01/30/96 08585604 19-1140 030 101 750.00CH P126



08/585494  
H/AWC

EXPRESS MAIL LABEL NO. EG 221-059-713 US
Date of Deposit: <u>Jan 10</u> , 1996
I hereby certify that this is being deposited with the United States Postal Service "Express Mail, Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to the Commissioner of Patents and Trademarks, Washington, D.C. 20231.
By: <u>Elmer Galbi</u>
Elmer Galbi, Reg. No. 19,761 Seiko Communications Systems, Inc. 1625 NW Amber Glen Court, Suite 140 Beaverton, OR 97006

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner of Patents and Trademarks  
Box FWC  
Washington, D. C. 20231  
Dear Sir:

January 10, 1996

#10/One B  
BS  
3/24/96

**REQUEST FOR A FILE WRAPPER CONTINUATION APPLICATION under 37 CFR 1.62**

This is a request for a file wrapper continuation application under the provisions of 37 CFR §1.62. The prior application is identified as follows:

Serial No.: 08/282,893  
Filed: 07/29/94  
Inventor: Michael C. Park  
Title: Dual Channel Advertising Referencing Vehicle Location  
Art Unit: 2202, Examiner: Blum, T.  
Docket: P126

The new application has the same inventor and the same title as the prior application. That is, the inventor and title of the new application are:

Inventor: Michael C. Park  
Title: Dual Channel Advertising Referencing Vehicle Location

The applicant's docket number for this new application is P126-FWC.

Please use all the contents of the prior application file wrapper, including the drawings, as the basic papers for the new application. A preliminary amendment is being filed herewith.

Please direct correspondence to: Elmer Galbi  
Seiko Communications Systems, Inc.  
1625 N.W. Amber Glen Court, Suite 140  
Beaverton, OR 97006  
Phone contact number: 503-531-1516

Please charge the \$750.00 filing fee for this application to Deposit Account 19-1140 which is in the name of Seiko Telecommunications Corp.

Please note the following:



- 1) There is no claim to priority to any foreign application under 35 U.S.C. 119.
- 2) The prior application is assigned of record to Seiko Communications Holding N.V.
- 3) The power of attorney in the prior application is to:  
Elmer Galbi, Reg No. 19761.
- 4) The specification of the application will be amended by inserting before the first line the sentence:

*21* ✓ This application is a continuation of application Serial Number 08/282,893, filed 07/29/94 which is now abandoned *6*

- 5) No payment of the issue fee, abandonment of, or termination of proceedings has occurred in the above identified prior application.
- 6) The above identified prior application is hereby expressly abandoned as of the filing date of this file wrapper continuation application.
- 7) Secrecy under 35 USC 122 is hereby waived to the extent that if information or access is available to any application in the file wrapper of this 37 CFR 1.62 application, be it either this application or a prior application in the same file wrapper. The Patent and Trademark Office may provide similar information or access to all the other applications in the same file wrapper.

Respectfully submitted,



Elmer Galbi  
Seiko Communications Systems, Inc.  
1625 N.W. Amber Glen Court, #140  
Beaverton, OR 97006  
Direct phone calls to: 503-531-1516



08/585604

EXPRESS MAIL LABEL NO. EG 221-059-713 US

Date of Deposit: Jan 10, 1996  
I hereby certify that this is being deposited with the United States Postal Service "Express Mail, Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to the Commissioner of Patents and Trademarks, Washington, D.C. 20231.

By: Elmer W. Galbi  
Elmer Galbi, Reg. No. 19,761  
Seiko Communications Systems, Inc.  
1625 NW Amber Glen Court, Suite 140  
Beaverton, OR 97006

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application:

Serial Number: 08/282,893

Art Group: 2202

Filing Date: 07/29/94

Examiner: BLUM, T

Inventor(s) : Michael C. Park

Title: Dual Channel Advertising Referencing  
Vehicle Location

Docket: P126

Date of this paper: January 10, 1996

Notice of Abandonment

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

Sir:

An FWC application has been filed on this date. The subject application is hereby abandoned.

Respectfully submitted,

Elmer W. Galbi  
Elmer W. Galbi, Reg. No. 19,761  
Seiko Communications Systems, Inc.  
1625 N.W. Amber Glen Court, #140  
Beaverton, Oregon 97006  
Direct calls to: (503) 531-1516



UNITED STATES DEPARTMENT OF COMMERCE  
Patent and Trademark Office  
ASSISTANT SECRETARY AND COMMISSIONER  
OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231

FROM: Sallye Rayford, Manager  
Initial Review Division

SUBJECT: Receipt of Papers and Fees File Under 37 CFR 1.10 by  
Express Mail

The filing date of Jan 16, 1996 is the correct date. The date on the Express Mail Label under 37 CFR 1.10 is Jan 19, 1996. On that date the PTO was closed all day due to adverse weather conditions (authorized by the Office of Personnel Management) or a normally scheduled Federal holiday within the District of Columbia. In accordance with 37 CFR 1.6 the papers have been stamped with the next succeeding day which is not a Saturday, Sunday or Federal holiday within the District of Columbia. The provision of 35 U.S.C. 21 (b) apply.

The papers were not stamped with the date on the certificate of mailing Express Mail Because the date on the certificate does not coincide with the date of deposit on the Express Mail label which the PTO takes evidence of when the package was mailed.

Date on certificate of mailing by Express Mail is \_\_\_\_\_

Date on Express Mail label is \_\_\_\_\_

Date of Receipt in PTO is \_\_\_\_\_

Therefore, the filing date is \_\_\_\_\_

The papers are not entitled to the benefits of 37 CFR 1.10 because:

\_\_\_\_\_

\_\_\_\_\_

Signed: \_\_\_\_\_

Date: \_\_\_\_\_

S. Bell

Jan 19, 1996



#11/ Prec  
OS 3/25/96

EXPRESS MAIL LABEL NO. EG 221-059-713 US
Date of Deposit: <u>Jan 10</u> , 1996
I hereby certify that this is being deposited with the United States Postal Service "Express Mail, Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to the Commissioner of Patents and Trademarks, Washington, D.C. 20231.
By: <u>Elmer Galbi</u>
Elmer Galbi, Reg. No. 19,761 Seiko Communications Systems, Inc. 1625 NW Amber Glen Court, Suite 140 Beaverton, OR 97006

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re PRIOR application:

Serial Number: 08/282,893

Filing Date: 07/29/94

Inventor(s) : Michael C. Park

Title: Dual Channel Advertising Referencing  
Vehicle Location

Art Group: 2202

Examiner: BLUM, T

Docket: P126

Date of this paper: January 10, 1996

**Preliminary Amendment Filed With FWC Application  
Responsive to the Office Action dated 07/18/95**

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

Sir:

Please amend the above referenced application as follows:

**In the Specification:**

After the title and prior to the first line insert:

⚡ This application is a continuation of application Serial Number 08/282,893, filed  
07/29/94 which is now abandoned. ~

**In the claims:**

Please cancel ~~claims~~ 1, 7, and 11.

**Add claims 15, 16, and 17 as shown below.**

---

15. A method for providing specific time and location sensitive advertising information to a moving vehicle, said specific time and location sensitive advertising information being selected from a large body of advertising information including a large number of records, each record including a specific time and location sensitive advertising information, the method comprising the steps:

transmitting to said vehicle by radio time said large body of advertising information,

receiving at said vehicle said large body of advertising information;

at a specific time, determining the location of said vehicle; and

selecting for display at said vehicle one of said records for display, said selection being at least in part based on the time of day and upon the location of said vehicle.

Subs  
101

16. A method of providing time and location sensitive advertising information to the operator of a moving vehicle, the method comprising the steps:

receiving multiple data records by radio signal, each data record including time and location sensitive advertising information;

C-2  
cancel

storing said data records;

calculating current location for said vehicle; and

selecting for display specific time and location specific advertising information depending upon the location of said vehicle;

displaying said selected time and location specific advertising information.

17. A method of providing travel information at a vehicle, the method comprising the steps:

collecting records relevant to multiple geographic points of interest, said information including a geographic location for each of said geographic points of interest;

C2  
cancel

detecting said vehicle position;

selecting for display records based upon the relative location of said vehicle and the location of the geographic point in the selected record; and

displaying relative to a current location as established in said detecting step a distance to and a distance toward a selected one of said geographic points of interest.

#### REMARKS:

This is a preliminary amendment being filed with an FWC application. This preliminary amendment is being filed in response to the Office Action dated 07/18/95. A notice of appeal was filed in the parent application on 11/13/95.

Claims 15, 16 and 17 are now in this application. These claims correspond somewhat to previous claims 1, 7 and 11 which have been canceled.

Applicant's prior claim 1 was rejected under 35 U.S.C. §112 second paragraph as indefinite. The problem noted by the examiner has been corrected in the newly submitted claims.

Prior claims 1, 7 and 11 were rejected under 35 U.S.C. § 102 (b) based upon Kashiwazaki. The Kashiwazaki reference shows a system for a vehicle which includes a CD ROM 23 which stores data, a GPS receiver 20 which indicates the location of the receiver, and a memory 30 which stores Schedule data. A map is displayed from the data on the CD ROM. The location of the vehicle is determined by the GPS receiver. The location of the vehicle at any instant is compared to where the vehicle should be according to the schedule information, as indicated at column 6, lines 47 et. seq.

"In this manner, the schedule data as for the destination of driving, is stored and judged every time when the map is displayed, and the position of the destination and various information related to the destination are automatically displayed in the display map"

Thus, the purpose and operation of the system shown in Kashiwazaki are to determine the location of the vehicle relative to a pre-established schedule information which is stored in the system and to display information relative to the location of the vehicle.

In contrast to the above, the applicant's system is directed to displaying time and location sensitive advertising information. With the applicant's system a large number

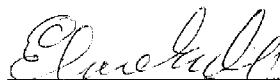


of information records are sent to the vehicle by radio. Each record includes a particular piece of time and location sensitive advertising information. At the vehicle the records are selected for display depending upon the time of day and upon the location of the vehicle. As stated in claims 15:

" said selection being at least in part based on the time of day and upon the location of said vehicle "

Applicant's system is dealing with a different type of information than is the reference and the selection process for displaying information is different. Since the reference does not show or suggest applicant's invention, allowance of claims 15, 16 and 17 is respectfully requested.

Respectfully submitted,



Elmer W. Galbi, Reg. No. 19,761  
Seiko Communications Systems, Inc.  
1625 N.W. Amber Glen Court, #140  
Beaverton, Oregon 97006  
Direct calls to: (503) 531-1516



**UNITED STATES DEPARTMENT OF COMMERCE  
Patent and Trademark Office**

Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231

SERIAL NUMBER	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
---------------	-------------	----------------------	---------------------

08/585,604 01/16/96 PARK

M P126-FWC  
EXAMINER

BLUM, T

ART UNIT PAPER NUMBER

12

22M2/0621

ELMER GALBI  
SEIKO COMMUNICATIONS SYSTEM INC  
1625 N W AMBER GLEN COURT SUITE 140  
BEAVERTON OR 97006

2202

DATE MAILED:

06/21/96

This is a communication from the examiner in charge of your application.  
COMMISSIONER OF PATENTS AND TRADEMARKS

☒ This application has been examined ☐ Responsive to communication filed on \_\_\_\_\_ ☐ This action is made final.

A shortened statutory period for response to this action is set to expire 3 month(s), \_\_\_\_\_ days from the date of this letter.  
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

**Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:**

- |   |   |
|---|---|
| 1. <input checked="" type="checkbox"/> Notice of References Cited by Examiner, PTO-892. | 2. <input type="checkbox"/> Notice of Draftsman's Patent Drawing Review, PTO-948. |
| 3. <input type="checkbox"/> Notice of Art Cited by Applicant, PTO-1449.                 | 4. <input type="checkbox"/> Notice of Informal Patent Application, PTO-152.       |
| 5. <input type="checkbox"/> Information on How to Effect Drawing Changes, PTO-1474.     | 6. <input type="checkbox"/> _____   |

**Part II SUMMARY OF ACTION**

1. ☒ Claims 15-17 are pending in the application.

Of the above, claims \_\_\_\_\_ are withdrawn from consideration.

2. ☐ Claims \_\_\_\_\_ have been cancelled.

3. ☐ Claims \_\_\_\_\_ are allowed.

4. ☒ Claims 15-17 are rejected.

5. ☐ Claims \_\_\_\_\_ are objected to.

6. ☐ Claims \_\_\_\_\_ are subject to restriction or election requirement.

7. ☒ This application has been filed with Informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.

8. ☐ Formal drawings are required in response to this Office action.

9. ☐ The corrected or substitute drawings have been received on \_\_\_\_\_. Under 37 C.F.R. 1.84 these drawings are ☐ acceptable; ☐ not acceptable (see explanation or Notice of Draftsman's Patent Drawing Review, PTO-948).

10. ☐ The proposed additional or substitute sheet(s) of drawings, filed on \_\_\_\_\_, has (have) been ☐ approved by the examiner; ☐ disapproved by the examiner (see explanation).

11. ☐ The proposed drawing correction, filed \_\_\_\_\_, has been ☐ approved; ☐ disapproved (see explanation).

12. ☐ Acknowledgement is made of the claim for priority under 35 U.S.C. 119. The certified copy has ☐ been received ☐ not been received ☐ been filed in parent application, serial no. \_\_\_\_\_; filed on \_\_\_\_\_.

13. ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.

14. ☐ Other

EXAMINER'S ACTION

Serial Number: 08/585604  
Art Unit: 2202

-2-

1. The preliminary amendments filed January 16, 1996 are acknowledged.

2. Claims 16 and 17 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As to claim 16, it is unclear if the displayed "specific time and location specific advertising information" is the received "time and location sensitive advertising information".

In the last two lines of claim 17, "established in said detecting step a distance to and a distance toward" is indefinite.

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

4. Claim 17 is rejected under 35 U.S.C. § 102(e) as being anticipated by Kashiwazaki.

Kashiwazaki teaches the claimed method for providing travel information relative to vehicle location including: determining the current location of the vehicle (GPS receiver 20), transmitting information of potential interest (received by vehicle receiver 29 shown in Figure 10, see column 7, lines 65+) including records (Figure 2),

Serial Number: 08/585604  
Art Unit: 2202

-3-

each record including at least a location corresponding to a geographic point (Figure 2),  
selecting at each travel information device (vehicle) ones of said records (Figure 2) for display (Figure 8),  
said selection being based on the location of said vehicle (column 8, lines 14-24).

5. Claims 15-17 are rejected under 35 U.S.C. § 102(e) as being anticipated by Schreder.

Schreder teaches the claimed method of providing time and location sensitive advertising information to the operator of a moving vehicle including: receiving multiple data records (column 13, lines 14-37), storing data 46, calculating current location for said vehicle (18 and 20), "selecting" (column 8, lines 60-67, and column 13, lines 24-37), and displaying 48.

6. Claim 17 is rejected under 35 U.S.C. § 102(e) as being anticipated by Fruchterman et al.

Fruchterman et al teaches the claimed method of providing traveling information at a vehicle (column 11, lines 18-22) including: collecting records of points of interest (column 12, lines 23-35, and column 16, lines 65-67, for example), "selecting" (column 11, lines 6-22), and displaying 8.

Serial Number: 08/585604  
Art Unit: 2202

-4-

7. Claim 17 is rejected under 35 U.S.C. § 102(e) as being anticipated by Sato et al.

Sato et al teaches the claimed method of providing traveling information at a vehicle including: collecting records of points of interest (12, 13, 24, Figures 5 and 9), "selecting" (16), and displaying 23.

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --  
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claim 17 is rejected under 35 U.S.C. § 102(b) as being anticipated by Wortham.

Wortham teaches the claimed method of providing traveling information at a vehicle including: collecting records of points of interest (column 9, lines 60-68), "selecting" (column 9, lines 60-68), and displaying 258.

10. The Fisher patent is cited to show a vehicle location system, note claim 12.

Serial Number: 08/585604  
Art Unit: 2202

-5-

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Theodore Blum whose telephone number is (703) 305-1833.

June 18, 1996

*Theodore M. Blum*  
THEODORE M. BLUM  
EXAMINER  
GROUP ART UNIT 222

TO SEPARATE, HOLD TOP AND BOTTOM EDGES, SNAP-APART AND DISCARD CARBON

FORM PTO-892 (REV. 2-82)		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		SERIAL NO. <b>08/585604</b>	GROUP/ART UNIT <b>2202</b>	ATTACHMENT TO PAPER NUMBER <b>12</b>		
NOTICE OF REFERENCES CITED				APPLICANT(S) <b>PARK</b>				
<b>U.S. PATENT DOCUMENTS</b>								
*		DOCUMENT NO.	DATE	NAME	CLASS	SUB- CLASS	FILING DATE IF APPROPRIATE	
	<b>A</b>	<b>5365449</b>	<b>11-94</b>	<b>KASHIWAZAKI</b>	<b>364</b>	<b>449</b>	<b>9-92</b>	
	<b>B</b>	<b>5504482</b>	<b>4-96</b>	<b>SCHREDER</b>	<b>340</b>	<b>995</b>	<b>6-93</b>	
	<b>C</b>	<b>5470233</b>	<b>11-95</b>	<b>FRUCHTERMAN ET AL</b>	<b>434</b>	<b>112</b>	<b>3-94</b>	
	<b>D</b>	<b>5353034</b>	<b>10-94</b>	<b>SATO ET AL</b>	<b>342</b>	<b>457</b>	<b>2-93</b>	
	<b>E</b>	<b>5299132</b>	<b>3-94</b>	<b>WORTHAM</b>	<b>364</b>	<b>460</b>		
	<b>F</b>	<b>5507485</b>	<b>4-96</b>	<b>FISHER</b>	<b>273</b>	<b>32R</b>	<b>4-94</b>	
	<b>G</b>							
	<b>H</b>							
	<b>I</b>							
	<b>J</b>							
	<b>K</b>							
<b>FOREIGN PATENT DOCUMENTS</b>								
*		DOCUMENT NO.	DATE	COUNTRY	NAME	CLASS	SUB- CLASS	PERTINENT SHTS. DWG. PP. SPEC.
	<b>L</b>							
	<b>M</b>							
	<b>N</b>							
	<b>O</b>							
	<b>P</b>							
	<b>Q</b>							
<b>OTHER REFERENCES (Including Author, Title, Date, Pertinent Pages, Etc.)</b>								
	<b>R</b>							
	<b>S</b>							
	<b>T</b>							
	<b>U</b>							
EXAMINER <b>T. BLUM</b>				DATE <b>6-18-96</b>				
* A copy of this reference is not being furnished with this office action. (See Manual of Patent Examining Procedure, section 707.05 (a).)								



13 GP 2202  
Reg. Ext. Time  
Gtd  
12 mos  
Cofr  
11-21-96

I hereby certify that on Nov 5, 1996 this document is being deposited with the United States Postal Service as **FIRST CLASS MAIL** addressed to the Commissioner of Patents and Trademarks, Washington, D.C. 20231.

By: Elmer Galbi  
Elmer Galbi, Reg. No. 19,761,  
Seiko Communications Systems Inc.  
1625 NW Amber Glen Court, #140  
Beaverton, OR 97006 Telephone 503-531-1516

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application:

Serial Number: 08/585,604

Filing Date: 01/16/96

Inventor(s) : Michael C. Park

Title: Dual Channel Advertising Referencing  
Vehicle Location

Art Group: 2202

Examiner: Blum, T.

Docket: P126-FWC

Date of this paper: November 5, 1996

Petition for an Extension of Time to Respond

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

Dear Sir:

Applicant petitions for a two month extension of time to respond to the Office Action dated 06/21/96.

An appropriate response to the Office Action is being filed herewith.

Please charge the fee for this petition (\$390.00) and any other appropriate fees in this application to the undersigned's Deposit Account No. 19-1140.

Respectfully submitted,

Elmer Galbi

Elmer Galbi, Reg. No. 19,761  
Seiko Communications Systems, Inc.  
1625 N.W. Amber Glen Court, #140  
Beaverton, OR 97006  
Direct phone calls to: (503)531-1516

RECEIVED  
NOV 20 1996  
GROUP 2200





I hereby certify that on Nov-5, 1996 this document is being deposited with the United States Postal Service as **FIRST CLASS MAIL** addressed to the Commissioner of Patents and Trademarks, Washington, D.C. 20231.

By: Elmer Galbi  
Elmer Galbi, Reg. No. 19,761,  
Seiko Communications Systems Inc.  
1625 NW Amber Glen Court, #140  
Beaverton, OR 97006 Telephone 503-531-1516

*H. D. Cyler*  
11-21-96

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application:

Serial Number: 08/585,604

Filing Date: 01/16/96

Inventor(s): Michael C. Park

Title: Dual Channel Advertising Referencing  
Vehicle Location

Art Group: 2202

Examiner: Blum, T.

Docket: P126-FWC

Date of this paper: November 5, 1996

Amendment Responsive to Office Action Dated 06/21/96

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

Dear Sir:

Please amend the subject application as follows:

In the Claims:

Please cancel claim 17.

Please amend claim 16 as follows:

(see next page)

---

2,18<sup>6</sup> (amended). A method of providing time and location sensitive advertising information to the operator of a moving vehicle, the method comprising the steps:

receiving multiple data records by radio signal, each data record [including] containing time of day information and location sensitive advertising information;

storing said data records;

calculating current location for said vehicle; and

selecting for display [specific] one of said records containing time of day information and location specific advertising information depending upon the time of day information and the location of said vehicle;

displaying said selected record containing time of day information and location specific advertising information.

---

**REMARKS:**

This amendment is responsive to the Office Action dated 6/21/96. A petition for an extension of time to respond is being filed herewith. Claim 17 has been canceled. Claims 15 and 16 are now in this application. Reconsideration and allowance of claims 15 and 16 as amended is respectfully requested for the reasons explained below.

Claims 16 and 17 were rejected under 35 U.S.C. § 112 as indefinite. The potential problems noted by the examiner have been corrected by the above amendments to these claims.

Claims 15-17 were rejected under 35 U.S.C. § 102(e) as being anticipated by Schreder. Schreder shows an automobile navigation and guidance system which receives traffic flow information by radio (see column 6 lines 47 et. seq.). The system includes a GPS receiver which gives position information and an inertial navigation system which provides additional position information and which also senses if the vehicle is involved in an accident (see column 6 lines 57 et. seq.). The system shown in Schreder uses RF telecommunications to automatically report the location of the vehicle in the case of an accident. The system also provides the driver with route guidance information.

The invention claimed by the applicant in claims 15 and 16 is directed to and serves an entirely different purpose than does the system shown in Schreder. Furthermore, the elements which comprise the applicant's system are not found in the system shown in the Schreder reference. Applicant's system is directed to providing time and location sensitive advertising material to a driver. The advertising material is sent to the vehicle by radio because the material is time sensitive. A particular piece of time and location advertising material is then presented to the

driver depending upon the time of day and the location of the vehicle. No such system is shown or suggested in the Schreder reference.

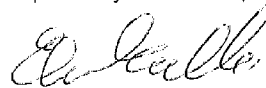
The novel elements which comprise applicant's system are specifically recited in applicant's claims. For example claim 16 recites:

"selecting for display one of said records containing time of day information and location specific advertising information depending upon the time of day information and the location of said vehicle;

displaying said selected record containing time of day information and location specific advertising information."

Since the references do not show or suggest applicant's novel invention, allowance of claims 15 and 16 is respectfully requested.

Respectfully submitted,



Elmer Galbi, Reg. No. 19,761  
Seiko Communications Systems, Inc.  
1625 N.W. Amber Glen Court, #140  
Beaverton, OR 97006  
Direct phone calls to: (503)531-1516



I hereby certify that on Nov 5, 1996 this document is being deposited with the United States Postal Service as **FIRST CLASS MAIL** addressed to the Commissioner of Patents and Trademarks, Washington, D.C. 20231.

By: Elmer Galbi  
Elmer Galbi, Reg. No. 19,761,  
Seiko Communications Systems Inc.  
1625 NW Amber Glen Court, #140  
Beaverton, OR 97006 Telephone 503-531-1516

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application:

Serial Number: 08/585,604

Filing Date: 01/16/96

Inventor(s) : Michael C. Park

Title: Dual Channel Advertising Referencing  
Vehicle Location

Art Group: 2202

Examiner: Blum, T.

Docket: P126-FWC

Date of this paper: November 5, 1996

Transmittal Letter

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

Dear Sir:

Transmitted for filing are the following:

- a) Petition for an Extension of Time to Respond
- b) Amendment Responsive to Office Action dated 06/21/96
- d) Return postcard

Please charge the fee of \$390.00 for the petition for extension of time to respond and any other appropriate fees to Deposit Account No. 19-1140.

Respectfully submitted,

Elmer Galbi  
Elmer Galbi, Reg. No. 19,761  
Seiko Communications Systems, Inc.  
1625 N.W. Amber Glen Court, #140  
Beaverton, OR 97006  
Direct phone calls to: (503)531-1516



UNITED STATES DEPARTMENT OF COMMERCE  
Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231

SERIAL NUMBER 027155,001	FILED DATE 11/16/96	PART PART	FIRST NAMED APPLICANT H	ATTORNEY DOCKET NO. 11-26-110
-----------------------------	------------------------	--------------	----------------------------	----------------------------------

ELNER GALDI  
SEIKO COMMUNICATIONS SYSTEM INC  
1625 N W ANDER GLEN COURT SUITE 140  
BEAVERTON OR 97006

22N1/1129

EXAMINER BLUM, T
---------------------

ART UNIT 2202	PAPER NUMBER 15
------------------	--------------------

11/26/96

DATE MAILED:

### NOTICE OF ALLOWABILITY

#### PART I.

1. ☒ This communication is responsive to the amendment filed 11-8-96
2. ☒ All the claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice Of Allowance And Issue Fee Due or other appropriate communication will be sent in due course.
3. ☒ The allowed claims are 15, 16
4. ☐ The drawings filed on \_\_\_\_\_ are acceptable.
5. ☐ Acknowledgment is made of the claim for priority under 35 U.S.C. 119. The certified copy has ☐ been received. ☐ not been received. ☐ been filed in parent application Serial No. \_\_\_\_\_, filed on \_\_\_\_\_.
6. ☐ Note the attached Examiner's Amendment.
7. ☐ Note the attached Examiner Interview Summary Record, PTOL-413.
8. ☐ Note the attached Examiner's Statement of Reasons for Allowance.
9. ☐ Note the attached NOTICE OF REFERENCES CITED, PTO-892.
10. ☐ Note the attached INFORMATION DISCLOSURE CITATION, PTO-1449.

#### PART II.

A SHORTENED STATUTORY PERIOD FOR RESPONSE to comply with the requirements noted below is set to EXPIRE THREE MONTHS FROM THE "DATE MAILED" indicated on this form. Failure to timely comply will result in the ABANDONMENT of this application. Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

1. ☐ Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL APPLICATION, PTO-152, which discloses that the oath or declaration is deficient. A SUBSTITUTE OATH OR DECLARATION IS REQUIRED.
2. ☒ APPLICANT MUST MAKE THE DRAWING CHANGES INDICATED BELOW IN THE MANNER SET FORTH ON THE REVERSE SIDE OF THIS PAPER.
  - a. ☒ Drawing informalities are indicated on the NOTICE RE PATENT DRAWINGS, PTO-948, attached hereto or to Paper No. 3. CORRECTION IS REQUIRED.
  - b. ☐ The proposed drawing correction filed on \_\_\_\_\_ has been approved by the examiner. CORRECTION IS REQUIRED.
  - c. ☐ Approved drawing corrections are described by the examiner in the attached EXAMINER'S AMENDMENT. CORRECTION IS REQUIRED.
  - d. ☒ Formal drawings are now REQUIRED.

Any response to this letter should include in the upper right hand corner, the following information from the NOTICE OF ALLOWANCE AND ISSUE FEE DUE: ISSUE BATCH NUMBER, DATE OF THE NOTICE OF ALLOWANCE, AND SERIAL NUMBER.

#### Attachments:

- Examiner's Amendment
- Examiner Interview Summary Record, PTOL-413
- Reasons for Allowance
- Notice of References Cited, PTO-892
- Information Disclosure Citation, PTO-1449
- Notice of Informal Application, PTO-152
- Notice re Patent Drawings, PTO-948
- Listing of Bonded Draftsmen
- Other

*Theodore M. Blum*  
THEODORE M. BLUM  
EXAMINER  
GROUP ART UNIT 222



UNITED STATES DEPARTMENT OF COMMERCE  
Patent and Trademark Office

Address: Box ISSUE FEE  
ASSISTANT COMMISSIONER FOR PATENTS  
WASHINGTON, D.C. 20231

**NOTICE OF ALLOWANCE AND ISSUE FEE DUE**

22M1/1126

ELMER GALBI

SEIKO COMMUNICATIONS SYSTEM INC  
1625 N W AMER GLEN COURT SUITE 140  
BEAVERTON OR 97006

APPLICATION NO.	FILING DATE	TOTAL CLAIMS	EXAMINER AND GROUP ART UNIT	DATE MAILED
08/585,604	01/16/96	002	BLUM, T	2202 11/26/96
First Named Applicant	PARK, MICHAEL C			

TITLE OF INVENTION: DUAL CHANNEL ADVERTISING REFERENCING VEHICLE LOCATION

ATTY'S DOCKET NO.	CLASS-SUBCLASS	BATCH NO.	APPLN. TYPE	SMALL ENTITY	FEE DUE	DATE DUE
2 P126-PWC	342-357.000	692	UTILITY	NO	\$1290.00	02/26/97

**THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED.**

**THE ISSUE FEE MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED.**

**HOW TO RESPOND TO THIS NOTICE:**

- I. Review the SMALL ENTITY status shown above.  
If the SMALL ENTITY is shown as yes, verify your current SMALL ENTITY status:
  - A. If the status is changed, pay twice the amount of the FEE DUE shown and notify the Patent and Trademark Office of the change in status, or
  - B. If the status is the same, pay the FEE DUE shown above.
- II. Part B of this notice should be completed and returned to the Patent and Trademark Office (PTO) with your ISSUE FEE. Even if the ISSUE FEE has already been paid by charge to deposit account, Part B should be completed and returned. If you are charging the ISSUE FEE to your deposit account, section "6b" of Part B should be completed.
- III. All communications regarding this application must give application number and batch number.  
Please direct all communication prior to issuance to Box ISSUE FEE unless advised to the contrary.

If the SMALL ENTITY is shown as NO:

- A. Pay FEE DUE shown above, or
- B. File verified statement of Small Entity Status before, or with, payment of 1/2 the FEE DUE shown above.

**IMPORTANT REMINDER: Patents Issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.**

4850 4200 A/

11-9 May 1996

BATCH: G92  
SERIAL NO.: 08/585,604  
FILING DATE: 01/16/96

EXPRESS MAIL LABEL NO. EF 865-834-765 US

Date of Deposit: 12/20, 1996

I hereby certify that this is being deposited with the United States Postal Service "Express Mail, Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to the Assistant Commissioner for Patents, Box Issue Fee, Washington, D.C. 20231.

By: 

Elmer Galbi, Reg. No. 19,761  
Seiko Communications Systems, Inc.  
1625 NW Amber Glen Court, Suite 140  
Beaverton, OR 97006

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application:

Serial Number: 08/585,604

Filing Date: 01/16/96

Inventor(s): Michael C. Park

Title: Dual Channel Advertising Referencing  
Vehicle Location

RECEIVED  
Publishing Division

Art Group: 2202 DEC 20 1996

Examiner: Blum, T.

06

Docket: P126-FWC

Date of this paper: December 20, 1996

LETTER TO THE CHIEF DRAFTSMAN

Assistant Commissioner for Patents  
Washington, D.C. 20231

Sir:

Enclosed are the formal drawings for the subject application. **Six sheets of formal drawings are enclosed.** We have received a NOTICE OF ALLOWANCE AND ISSUE FEE DUE for the subject application.

The enclosed drawings conform to the previous informal drawings and add no new matter. The serial number and art group are written on the reverse side of the drawings. If there are any problems with the enclosed drawings, you can contact applicant's attorney by telephone at 503-531-1516.

Respectfully submitted,



Elmer Galbi, Reg. No. 19,761  
Seiko Communications Systems, Inc.  
1625 N.W. Amber Glen Court, #140  
Beaverton, OR 97006  
Direct phone calls to: (503)531-1516



552/5044

5627549

1/6

APPROVED	O.G. FIG. 2
BY	CLASS
DRAFTSMAN	SUBCLASS
	342
	357

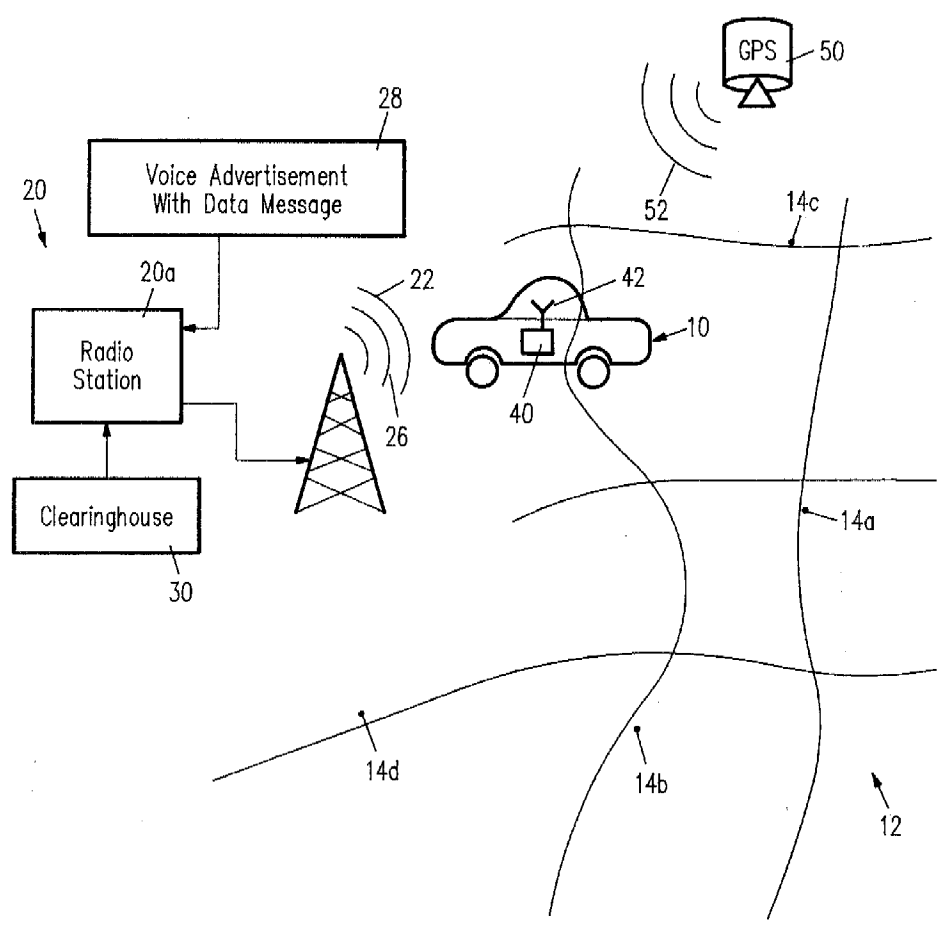


FIG. 1

APPROVED	O.G. FIG. 2
	CLASS SUBCLASS
	342 357
BY	DRAFTSMAN

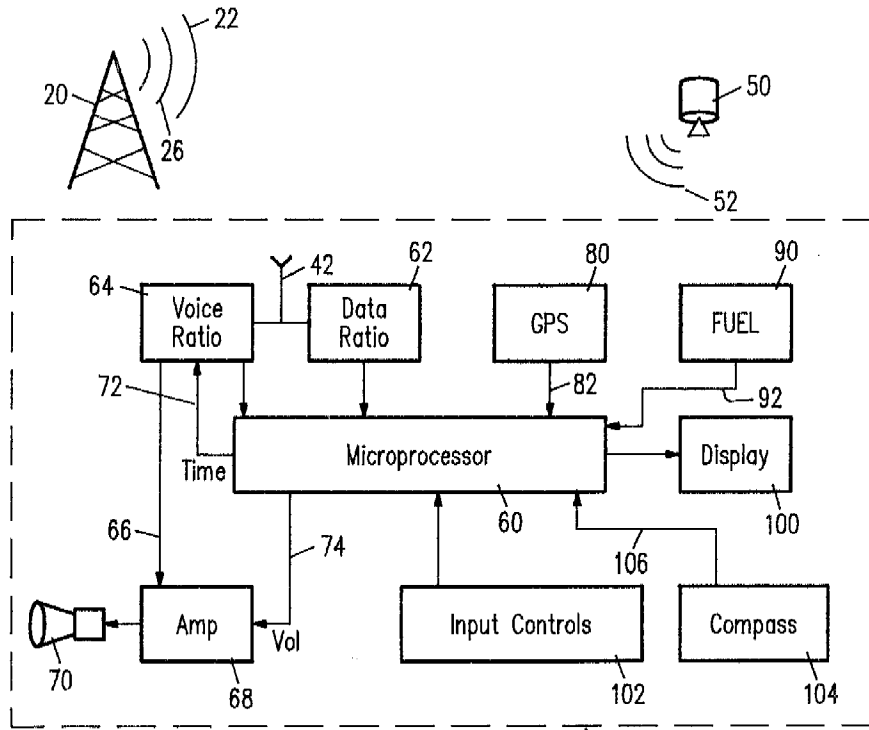


FIG. 2

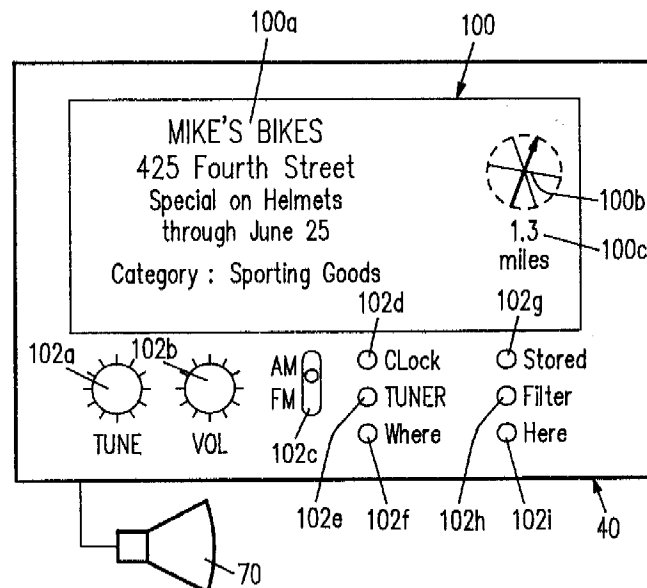


FIG. 3

APPROVED	O.G. FIG.	
	CLASS	SUBCLASS
BY		
DRAFTSMAN		

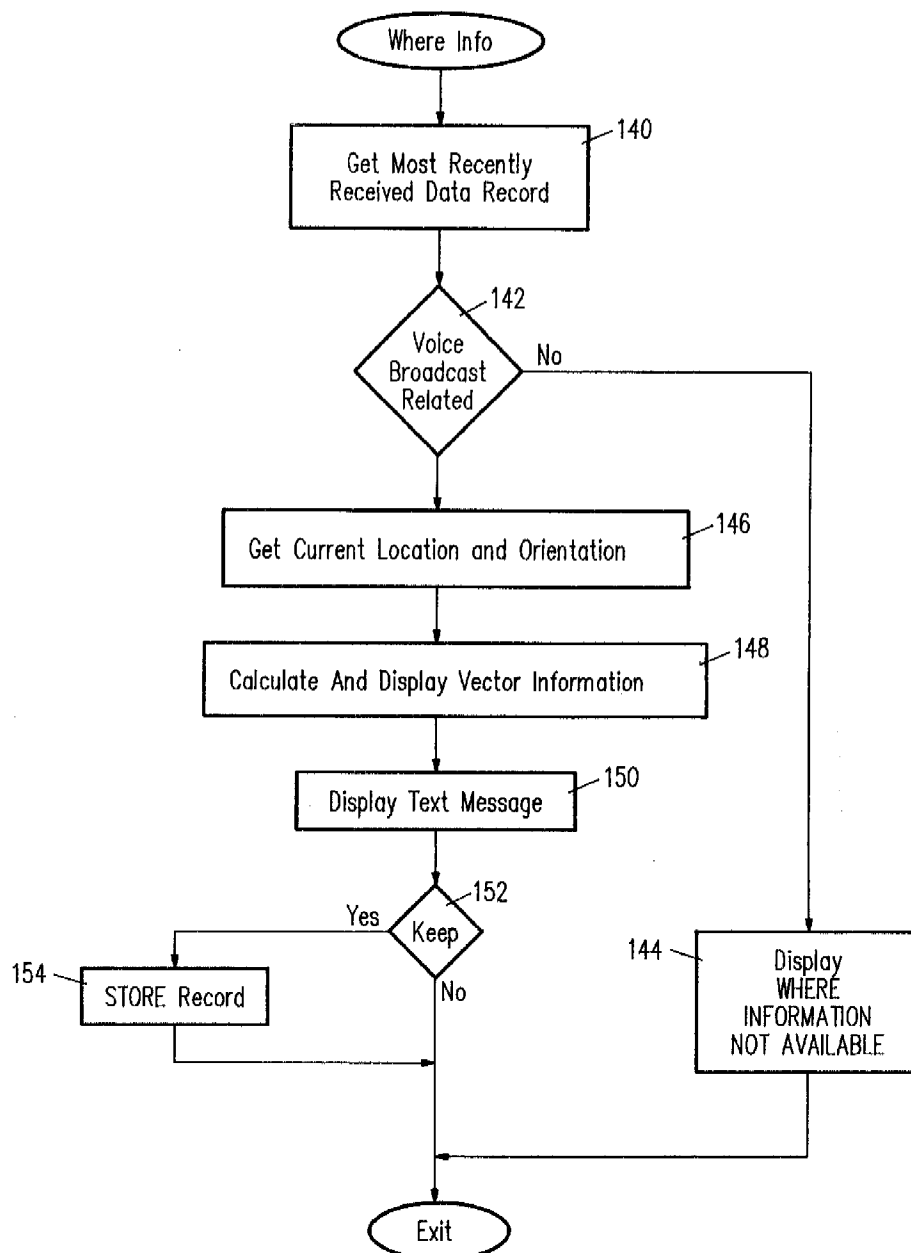


FIG. 4

APPROVED BY DRAFTSMAN	O.G. FIG.	
	CLASS	SUBCLASS

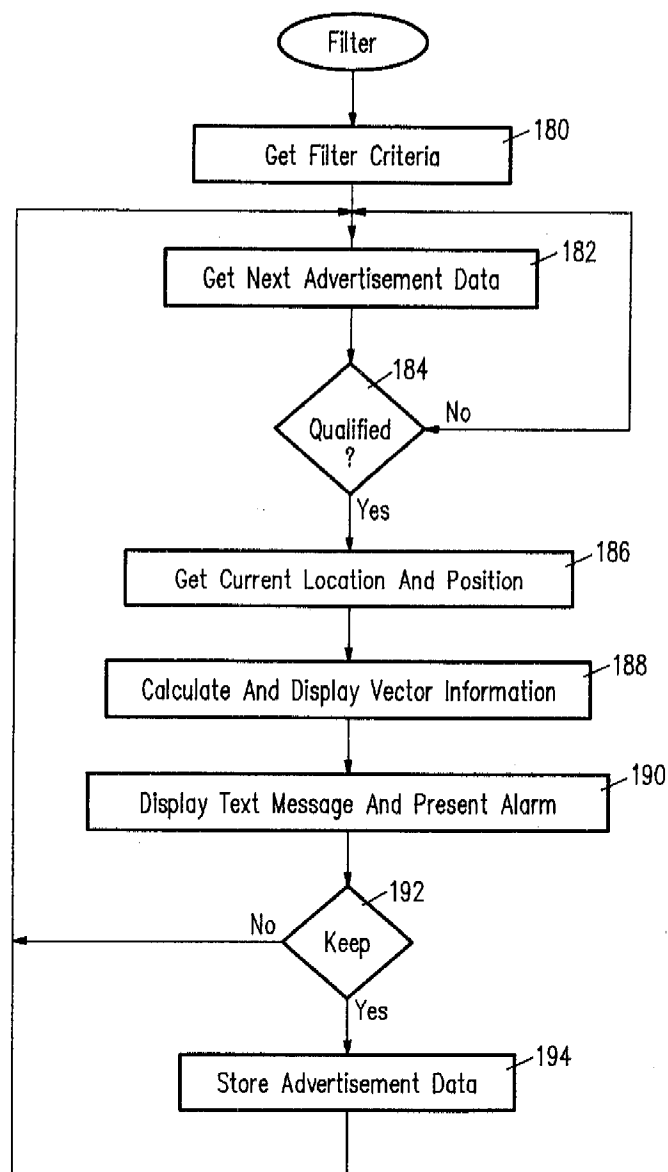


FIG. 5

APPROVED BY DRAFTSMAN	O.G. FIG.	
	CLASS	SUBCLASS

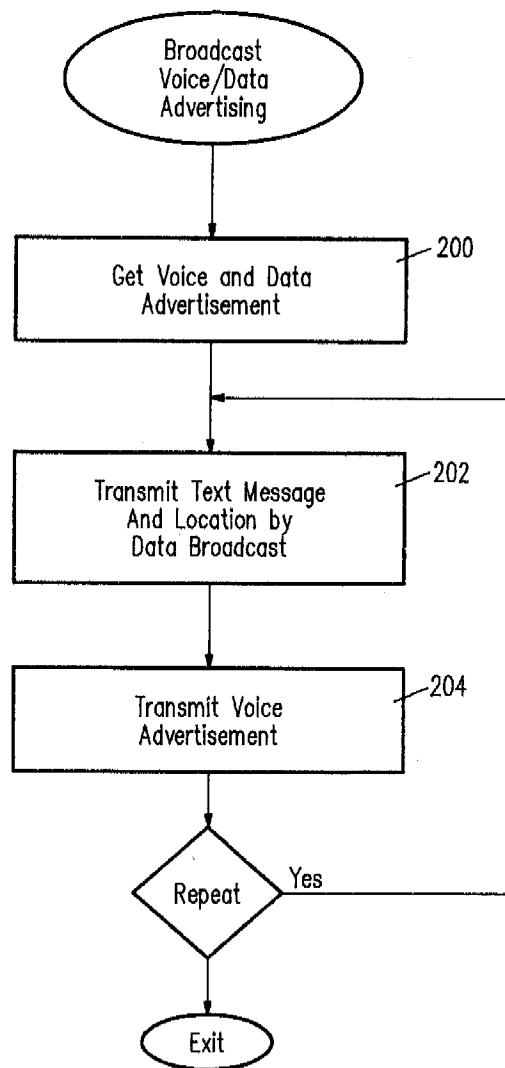


FIG. 6

APPROVED BY DRAFTSMAN	O.G. FIG.	
	CLASS	SUBCLASS

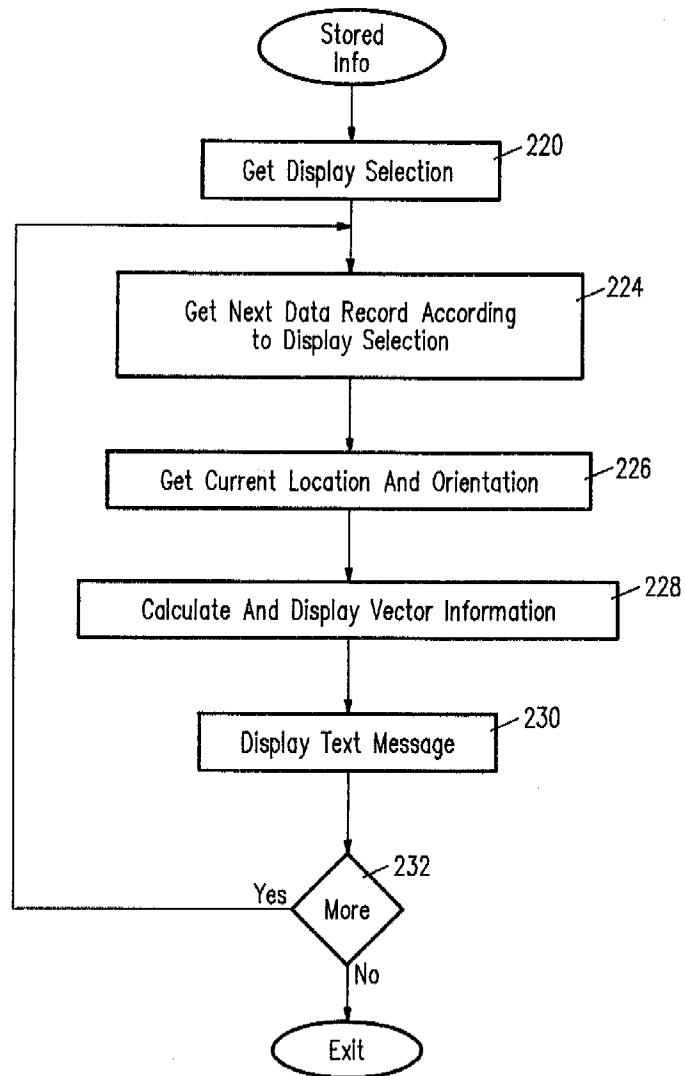


FIG. 7

# PART B—ISSUE FEE TRANSMITTAL

**MAILING INSTRUCTIONS:** This form should be used for transmitting the ISSUE FEE. Blocks 2 through 6 should be completed where appropriate. All further correspondence including the issue Fee Receipt, the Patent, advance orders and notification of maintenance fees will be mailed to addresses entered in Block 1 unless you direct otherwise, by: (a) specifying a new correspondence address in Block 3 below; or (b) providing the PTO with a separate "FEE ADDRESS" for maintenance fee notifications with the payment of issue Fee or thereafter. See reverse for Certificate of Mailing, below.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

**Burden Hour Statement:** This form is estimated to take 0.2 hours to complete. Time will vary depending on the needs of the individual case. Any comments on the amount of time required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, D.C. 20231.

DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Box Issue Fee, Assistant Commissioner for Patents, Washington D.C. 20231

1. CORRESPONDENCE ADDRESS	22M1/1126
ELMER GALBI SEIKO COMMUNICATIONS SYSTEM INC 1625 N W AMBER GLEN COURT SUITE 120 BEAVERTON OR 97006	

2. INVENTOR(S) ADDRESS CHANGE (Complete only if there is a change)	
INVENTOR'S NAME	
Street Address	
City, State and Zip Code	RECEIVED Publishing Division JAN 17 1997
CO-INVENTOR'S NAME	
Street Address	
City, State and Zip Code	06
<input type="checkbox"/> Check if additional changes are enclosed	

APPLICATION NO.	FILING DATE	TOTAL CLAIMS	EXAMINER AND GROUP ART UNIT	DATE MAILED
08/583,604	01/16/96	002	BLUM, T	2202 11/26/96
First Named Applicant: PARK, MICHAEL C				

TITLE OF DUAL CHANNEL ADVERTISING REFERENCING VEHICLE LOCATION INVENTION

ATTY'S DOCKET NO.	CLASS-SUBCLASS	BATCH NO.	APPLN. TYPE	SMALL ENTITY	FEE DUE	DATE DUE
2 P126-PWC	342-357.000	692	UTILITY	NO	\$1290.00	02/26/97

3. Correspondence address change (Complete only if there is a change)

4. For printing on the patent front page, list the names of not more than 3 registered patent attorneys or agents OR, alternatively, the name of a firm having as a member a registered attorney or agent. If no name is listed, no name will be printed.

1 Elmer Galbi

2

3

5. ASSIGNMENT DATA TO BE PRINTED ON THE PATENT (print or type)

(1) NAME OF ASSIGNEE:	Seiko Communications Holding N.V.
(2) ADDRESS (CITY & STATE OR COUNTRY)	Netherlands Antilles

5a. The following fees are enclosed:	
<input type="checkbox"/> Issue Fee	<input type="checkbox"/> Advance Order - # of Copies
5b. The following fees should be charged to:	
DEPOSIT ACCOUNT NUMBER	19-1140
(ENCLOSE A COPY OF THIS FORM)	
<input checked="" type="checkbox"/> Issue Fee	<input checked="" type="checkbox"/> Advance Order - # of Copies 5
<input type="checkbox"/> Any Deficiencies in Enclosed Fees	

A ☐ This application is NOT assigned.

☒ Assignment previously submitted to the Patent and Trademark Office.

☐ Assignment is being submitted under separate cover. Assignment should be directed to Box ASSIGNMENTS.

**PLEASE NOTE:** Unless an assignee is identified in Block 5, no assignee data will appear on the patent. Inclusion of assignee data is only appropriate when an assignment has been previously submitted to the PTO or is being submitted under separate cover. Completion of this form is NOT a substitute for filing an assignment.

The COMMISSIONER OF PATENTS AND TRADEMARKS is requested to apply the issue Fee to the application identified above.

(Authorized Signature) *Elmer Galbi* (Date) 1/13/97  
NOTE: The Issue Fee will not be accepted from anyone other than the applicant, a registered attorney or agent, or the assignee or other party in interest as shown by the records of the Patent and Trademark Office.

## Certificate of Mailing

Note: If this certificate of mailing is used, it can be used to transmit the Issue Fee. This certificate cannot be used for any other accompanying papers.

Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing.

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Box ISSUE FEE

Assistant Commissioner for Patents  
Washington, D.C. 20231

on: Jan 13, 1997 (Date)  
Elmer Galbi (Name of person making deposit)  
*Elmer Galbi* (Signature)  
Jan 13, 1997 (Date)

1. TRANSMIT THIS FORM WITH FEE

The  
United  
States  
of  
America



PTO UTILITY GRANT

Paper Number 10

**The Commissioner of Patents  
and Trademarks**

*Has received an application for a patent for a new and useful invention. The title and description of the invention are enclosed. The requirements of law have been complied with, and it has been determined that a patent on the invention shall be granted under the law.*

*Therefore, this*

**United States Patent**

*Grants to the person(s) having title to this patent the right to exclude others from making, using, offering for sale, or selling the invention throughout the United States of America or importing the invention into the United States of America for the term set forth below, subject to the payment of maintenance fees as provided by law.*

*If this application was filed prior to June 8, 1995, the term of this patent is the longer of seventeen years from the date of grant of this patent or twenty years from the earliest effective U.S. filing date of the application, subject to any statutory extension.*

*If this application was filed on or after June 8, 1995, the term of this patent is twenty years from the earliest effective U.S. filing date of the application, subject to any statutory extension.*

*Bruce Lehman*

Commissioner of Patents and Trademarks

*Margaret Turner*

Attest





UNITED STATES DEPARTMENT OF COMMERCE  
Patent and Trademark Office

ASSISTANT SECRETARY AND COMMISSIONER  
OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231

**CHANGE OF ADDRESS/POWER OF ATTORNEY**

FILE LOCATION 9200 SERIAL NUMBER 08585604 PATENT NUMBER 5627549

THE CORRESPONDENCE ADDRESS HAS BEEN CHANGED TO CUSTOMER # 23396

THE PRACTITIONERS OF RECORD HAVE BEEN CHANGED TO CUSTOMER # 23396

THE FEE ADDRESS HAS BEEN CHANGED TO CUSTOMER # 23396

ON 04/12/01 THE ADDRESS OF RECORD FOR CUSTOMER NUMBER 23396 IS:

ELMER GALBI  
13314 VERMEER DRIVE  
LAKE OSWEGO OR 97035

AND THE PRACTITIONERS OF RECORD FOR CUSTOMER NUMBER 23396 ARE:

19761

PTO INSTRUCTIONS: PLEASE TAKE THE FOLLOWING ACTION WHEN THE  
CORRESPONDENCE ADDRESS HAS BEEN CHANGED TO CUSTOMER NUMBER:  
RECORD, ON THE NEXT AVAILABLE CONTENTS LINE OF THE FILE JACKET,  
'ADDRESS CHANGE TO CUSTOMER NUMBER'. LINE THROUGH THE OLD  
ADDRESS ON THE FILE JACKET LABEL AND ENTER ONLY THE 'CUSTOMER  
NUMBER' AS THE NEW ADDRESS. FILE THIS LETTER IN THE FILE JACKET.  
WHEN ABOVE CHANGES ARE ONLY TO FEE ADDRESS AND/OR PRACTITIONERS  
OF RECORD, FILE LETTER IN THE FILE JACKET.  
THIS FILE IS ASSIGNED TO GAU 2202.

# **CODE SHEET FOR CONTINUING DATA**

Line	Code	Serial No.	Filing Date	Status	Document No.	Issue Date
104	71	282893	7/29/94	03		
105						
106						
107						
108						
109						
110						
111						
112						
113						
114						
115						
116						
117						

## Condition and Status Codes for Continuing Data

### CONDITION CODE

71	Continuation of Ser. No.
81	which is a continuation of Ser. No.
91	and a continuation of Ser. No.
72	Continuation-in-part of Ser. No.
82	which is a continuation-in-part of Ser. No.
75	and a continuation-in-part of Ser. No.
74	Division of Ser. No.
84	which is a division of Ser. No.
76	and a division of Ser. No.
86	, said Ser. No.
89	Ser. No.
90	and Ser. No.
92	each

### STATUS CODE

01	Patent No.
03	abandoned
04	Defensive Publication No.
05	Published Application No.
06	Reissue Patent No.

NOTE I: When the codes 86 and 92 are used, they must be followed by 81, 82 or 84 -- conditions beginning with "which is"

NOTE II: Codes 71, 72 and 74 may be used only on the first line; one of them must be used on the first line.

# **PATENT APPLICATION FEE DETERMINATION RECORD**

Effective October 1, 1995

Application or Docket Number

585604

## **CLAIMS AS FILED - PART I**

	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA
FOR		
BASIC FEE		
TOTAL CLAIMS	14 minus 20 = *	—
INDEPENDENT CLAIMS	3 minus 3 = *	—
MULTIPLE DEPENDENT CLAIM PRESENT		

\* If the difference in column 1 is less than zero, enter "0" in column 2

### **SMALL ENTITY**

RATE	FEE
	375.00
x\$11=	
x39=	
+125=	
TOTAL	

### **OTHER THAN SMALL ENTITY**

RATE	FEE
	750.00
x\$22=	
x78=	
+250=	
TOTAL	750

## **CLAIMS AS AMENDED - PART II**

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT	(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA
AMENDMENT A			
Total	* 2 Minus	** 20	= —
Independent	* 2 Minus	*** 3	= —
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM			

### **SMALL ENTITY**

RATE	ADDITIONAL FEE
x\$11=	
x39=	
+125=	
TOTAL	
ADDIT. FEE	

### **OTHER THAN SMALL ENTITY**

RATE	ADDITIONAL FEE
x\$22=	
x78=	
+250=	
TOTAL	
ADDIT. FEE	

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT	(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA
AMENDMENT B			
Total	* Minus	**	=
Independent	* Minus	***	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM			

RATE	ADDITIONAL FEE
x\$11=	
x39=	
+125=	
TOTAL	
ADDIT. FEE	

RATE	ADDITIONAL FEE
x\$22=	
x78=	
+250=	
TOTAL	
ADDIT. FEE	

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT	(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA
AMENDMENT C			
Total	* Minus	**	=
Independent	* Minus	***	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM			

RATE	ADDITIONAL FEE
x\$11=	
x39=	
+125=	
TOTAL	
ADDIT. FEE	

RATE	ADDITIONAL FEE
x\$22=	
x78=	
+250=	
TOTAL	
ADDIT. FEE	

\* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.  
 \*\* If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20."  
 \*\*\* If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3."  
 The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

CA

7	1	
---	---	--

ATTORNEY DOCKET NUMBER  
26-FCWC

DATE		
MONTH	DAY	YEAR
01	01	01

								C
								H
								L
								n
								e
								t
								d

FOREIGN FILING DATE		
MONTH	DAY	YEAR


<b>PATENT APPLICATION FEE DETERMINATION RECORD</b> Effective October 1, 1992						Application or Docket Number <div style="font-size: 1.5em; font-family: cursive;">982893</div>	
<b>CLAIMS AS FILED - PART I</b> (Column 1) (Column 2)						<b>SMALL ENTITY</b> OR <b>OTHER THAN SMALL ENTITY</b>	
FOR	NUMBER FILED	NUMBER EXTRA				RATE	FEE
BASIC FEE							
TOTAL CLAIMS	14		minus 20 =	*		OR	
INDEPENDENT CLAIMS	3		minus 3 =	*		OR	
MULTIPLE DEPENDENT CLAIM PRESENT							
* If the difference in column 1 is less than zero, enter "0" in column 2						TOTAL	
<b>CLAIMS AS AMENDED - PART II</b> (Column 1) (Column 2) (Column 3)						<b>SMALL ENTITY</b> OR <b>OTHER THAN SMALL ENTITY</b>	
AMENDMENT A		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE	ADDI-TIONAL FEE
	Total	3	Minus	20	=	x\$11=	
	Independent	3	Minus	3	=	x 37=	
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM					+ 115=	
						TOTAL	
AMENDMENT B		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE	ADDI-TIONAL FEE
	Total		Minus		=	x\$11=	
	Independent		Minus		=	x 37=	
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM					+ 115=	
						TOTAL	
AMENDMENT C		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE	ADDI-TIONAL FEE
	Total		Minus		=	x\$11=	
	Independent		Minus		=	x 37=	
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM					+115=	
						TOTAL	

\* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

\*\* If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

\*\*\* If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.



1ST EXAMINER	DATE
2ND EXAMINER	DATE

120

APPLICATION NUMBER

**TYPE  
APPL**

**FILING DATE**  
**MONTH DAY YEAR** 11 15 2011

**SPECIAL  
HANDLING**

GROUP  
ART UNIT

CLASS

**DRAWING**

282893

DATE	DESCRIPTION	AMOUNT	TOTAL CLAIMS
10/1/2023	...	...	...
10/2/2023	...	...	...
10/3/2023	...	...	...
10/4/2023	...	...	...
10/5/2023	...	...	...
10/6/2023	...	...	...
10/7/2023	...	...	...
10/8/2023	...	...	...
10/9/2023	...	...	...
10/10/2023	...	...	...
10/11/2023	...	...	...
10/12/2023	...	...	...
10/13/2023	...	...	...
10/14/2023	...	...	...
10/15/2023	...	...	...
10/16/2023	...	...	...
10/17/2023	...	...	...
10/18/2023	...	...	...
10/19/2023	...	...	...
10/20/2023	...	...	...
10/21/2023	...	...	...
10/22/2023	...	...	...
10/23/2023	...	...	...
10/24/2023	...	...	...
10/25/2023	...	...	...
10/26/2023	...	...	...
10/27/2023	...	...	...
10/28/2023	...	...	...
10/29/2023	...	...	...
10/30/2023	...	...	...
10/31/2023	...	...	...
11/1/2023	...	...	...
11/2/2023	...	...	...
11/3/2023	...	...	...
11/4/2023	...	...	...
11/5/2023	...	...	...
11/6/2023	...	...	...
11/7/2023	...	...	...
11/8/2023	...	...	...
11/9/2023	...	...	...
11/10/2023	...	...	...
11/11/2023	...	...	...
11/12/2023	...	...	...
11/13/2023	...	...	...
11/14/2023	...	...	...
11/15/2023	...	...	...
11/16/2023	...	...	...
11/17/2023	...	...	...
11/18/2023	...	...	...
11/19/2023	...	...	...
11/20/2023	...	...	...
11/21/2023	...	...	...
11/22/2023	...	...	...
11/23/2023	...	...	...
11/24/2023	...	...	...
11/25/2023	...	...	...
11/26/2023	...	...	...
11/27/2023	...	...	...
11/28/2023	...	...	...
11/29/2023	...	...	...
11/30/2023	...	...	...
12/1/2023	...	...	...
12/2/2023	...	...	...
12/3/2023	...	...	...
12/4/2023	...	...	...
12/5/2023	...	...	...
12/6/2023	...	...	...
12/7/2023	...	...	...
12/8/2023	...	...	...
12/9/2023	...	...	...
12/10/2023	...	...	...
12/11/2023	...	...	...
12/12/2023	...	...	...
12/13/2023	...	...	...
12/14/2023	...	...	...
12/15/2023	...	...	...
12/16/2023	...	...	...
12/17/2023	...	...	...
12/18/2023	...	...	...
12/19/2023	...	...	...
12/20/2023	...	...	...
12/21/2023	...	...	...
12/22/2023	...	...	...
12/23/2023	...	...	...
12/24/2023	...	...	...
12/25/2023	...	...	...
12/26/2023	...	...	...
12/27/2023	...	...	...
12/28/2023	...	...	...
12/29/2023	...	...	...
12/30/2023	...	...	...
12/31/2023	...	...	...
1/1/2024	...	...	...
1/2/2024	...	...	...
1/3/2024	...	...	...
1/4/2024	...	...	...
1/5/2024	...	...	...
1/6/2024	...	...	...
1/7/2024	...	...	...
1/8/2024	...		

**INDEPENDENT  
CLAIMS**

## SMALL ENTITY?

**FILING FEE**

FOREIGN  
LICENSE

ALL OTHER DOCKET NUMBERS

## CONTINUITY DATA

CONT	STATUS
CODE	CODE

PARENT APPLICATION SERIAL NUMBER	CHILD APPLICATION SERIAL NUMBER	STATUS	REMARKS
1	1	APPROVED	
2	2	PENDING	
3	3	REJECTED	
4	4	APPROVED	
5	5	PENDING	
6	6	REJECTED	
7	7	APPROVED	
8	8	PENDING	
9	9	REJECTED	
10	10	APPROVED	
11	11	PENDING	
12	12	REJECTED	
13	13	APPROVED	
14	14	PENDING	
15	15	REJECTED	
16	16	APPROVED	
17	17	PENDING	
18	18	REJECTED	
19	19	APPROVED	
20	20	PENDING	
21	21	REJECTED	
22	22	APPROVED	
23	23	PENDING	
24	24	REJECTED	
25	25	APPROVED	
26	26	PENDING	
27	27	REJECTED	
28	28	APPROVED	
29	29	PENDING	
30	30	REJECTED	
31	31	APPROVED	
32	32	PENDING	
33	33	REJECTED	
34	34	APPROVED	
35	35	PENDING	
36	36	REJECTED	
37	37	APPROVED	
38	38	PENDING	
39	39	REJECTED	
40	40	APPROVED	
41	41	PENDING	
42	42	REJECTED	
43	43	APPROVED	
44	44	PENDING	
45	45	REJECTED	
46	46	APPROVED	
47	47	PENDING	
48	48	REJECTED	
49	49	APPROVED	
50	50	PENDING	
51	51	REJECTED	
52	52	APPROVED	
53	53	PENDING	
54	54	REJECTED	
55	55	APPROVED	
56	56	PENDING	
57	57	REJECTED	
58	58	APPROVED	
59	59	PENDING	
60	60	REJECTED	
61	61	APPROVED	
62	62	PENDING	
63	63	REJECTED	
64	64	APPROVED	
65	65	PENDING	
66	66	REJECTED	
67	67	APPROVED	
68	68	PENDING	
69	69	REJECTED	
70	70	APPROVED	
71	71	PENDING	
72	72	REJECTED	
73	73	APPROVED	
74	74	PENDING	
75	75	REJECTED	
76	76	APPROVED	
77	77	PENDING	
78	78	REJECTED	
79	79	APPROVED	
80	80	PENDING	
81	81	REJECTED	
82	82	APPROVED	
83	83	PENDING	
84	84	REJECTED	
85	85	APPROVED	
86	86	PENDING	
87	87	REJECTED	
88	88	APPROVED	
89	89	PENDING	
90	90	REJECTED	
91	91	APPROVED	
92	92	PENDING	
93	93	REJECTED	
94	94	APPROVED	
95	95	PENDING	
96	96	REJECTED	
97	97	APPROVED	
98	98	PENDING	
99	99	REJECTED	
100	100	APPROVED	

PCT APPLICATION SERIAL NUMBER
-------------------------------

PARENT PATENT NUMBER
----------------------

PARENT FILING DATE			
MONTH	DAY	Y	

[illegible][illegible][illegible]

## PCT/FOREIGN APPLICATION DATA

**FOREIGN  
PRIORITY  
CLAIMED**

COUNTRY  
CODE[illegible]

FOREIGN FILING DATE		
MONTH	DAY	YEAR

--	--	--	--	--


[illegible]




**United States  
Patent and  
Trademark Office**

Patent Bibliographic Data				01/04/2007 12:46 PM	
Patent Number:	5627549		Application Number:	08585604	
Issue Date:	05/06/1997		Filing Date:	01/16/1996	
Title:	DUAL CHANNEL ADVERTISING REFERENCING VEHICLE LOCATION				
Status:	12th year fee window opens: 05/06/2008			Entity:	Large
Window Opens:	05/06/2008	Surcharge Date:	11/07/2008	Expiration:	N/A
Fee Amt Due:	Window not open	Surchg Amt Due:	Window not open	Total Amt Due:	Window not open
Fee Code:	1553	MAINTENANCE FEE DUE AT 11.5 YEARS			
Surcharge Fee Code:					
Most recent events (up to 7):	2004/09/22 2000/09/28	Payment of Maintenance Fee, 8th Year, Large Entity. Payment of Maintenance Fee, 4th Year, Large Entity. --- End of Maintenance History ---			
Address for fee purposes:	ELMER GALBI 13314 VERMEER DRIVE LAKE OSWEGO, OR 97035				



US005627549A

# United States Patent [19] Park

[11] Patent Number: 5,627,549

[45] Date of Patent: May 6, 1997

[54] DUAL CHANNEL ADVERTISING  
REFERENCING VEHICLE LOCATION

[75] Inventor: Michael C. Park, Portland, Oreg.

[73] Assignee: Seiko Communications Holding N.V.,  
Netherlands Antilles

[21] Appl. No.: 585,604

[22] Filed: Jan. 16, 1996

## Related U.S. Application Data

[63] Continuation of Ser. No. 282,893, Jul. 29, 1994, abandoned.

[51] Int. Cl.<sup>6</sup> ..... H04B 7/185; G01S 5/02

[52] U.S. Cl. .... 342/357; 364/449.1; 340/996

[58] Field of Search ..... 342/357; 364/449;  
340/996

## [56] References Cited

### U.S. PATENT DOCUMENTS

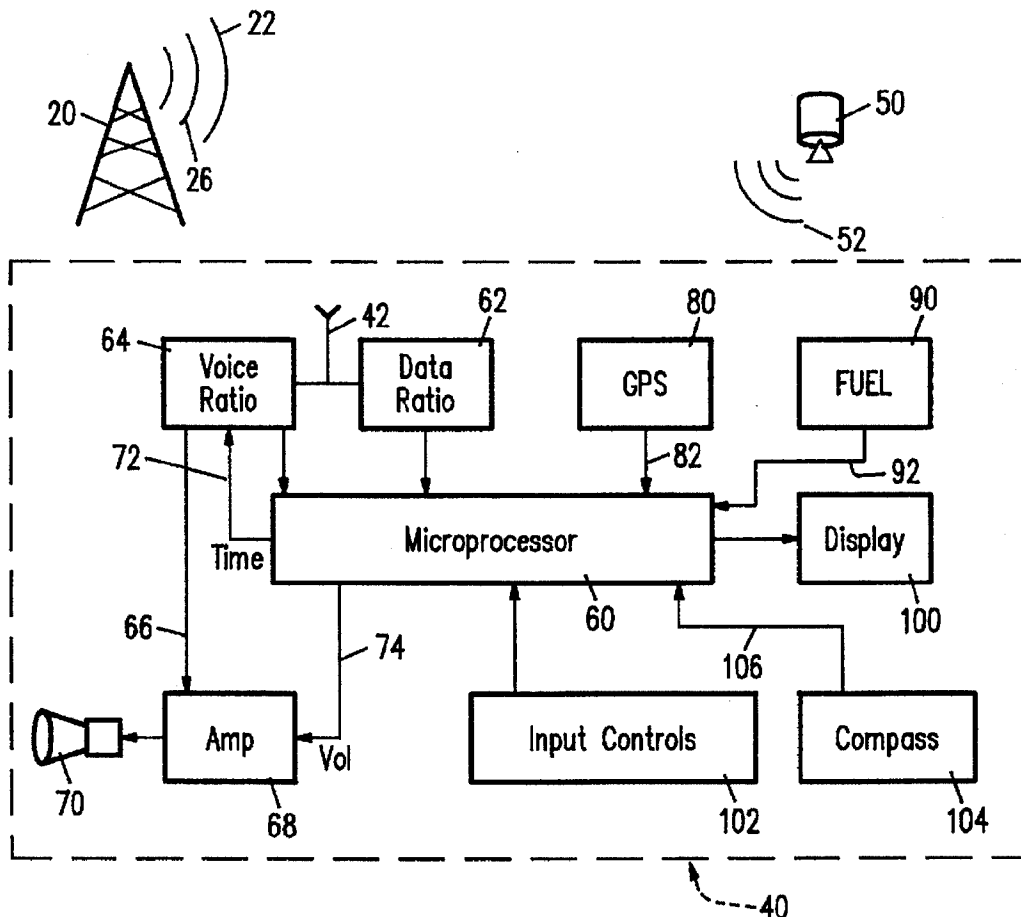
5,299,132	3/1994	Wortham	364/460
5,303,393	4/1994	Noreen et al.	455/12.1
5,353,034	10/1994	Sato et al.	342/457
5,359,527	10/1994	Takanabe et al.	364/449

5,365,449	11/1994	Kashiwazaki	364/449
5,470,233	11/1995	Fruchterman et al.	434/112
5,504,482	4/1996	Schreder	340/995
5,507,485	4/1996	Fisher	273/32 R

Primary Examiner—Theodore M. Blum  
Attorney, Agent, or Firm—Elmer Galbi

## [57] ABSTRACT

A vehicle information device and collects information concerning specific geographic points of interest. The operator recalls for display such information, including a display showing direction and distance of travel to a designated geographic point of interest relative to a then-current vehicle location. Dual channel advertising is transmitted by voice broadcast and by data broadcast. Upon hearing in the voice broadcast an advertisement of interest, the operator captures the associated data broadcast including, among other detailed text message information, the location of the advertiser. Distance and relative direction of travel from the current vehicle location to the geographic point of interest is thereby presented. Multiple geographic points of interest are stored for selective review whereby the user constructs a database containing locations of particular interest to a particular person.

**2 Claims, 6 Drawing Sheets**



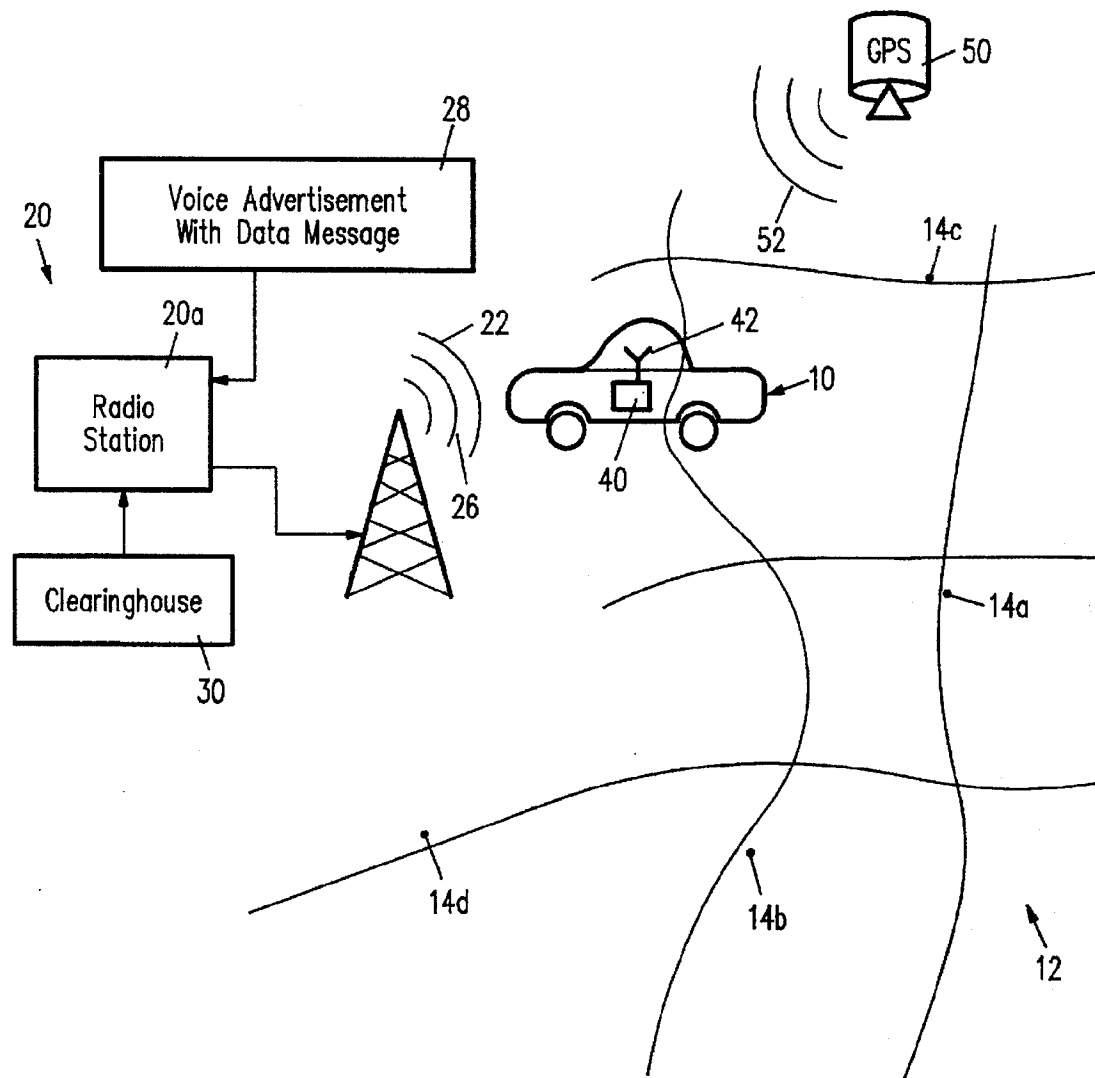


FIG. 1

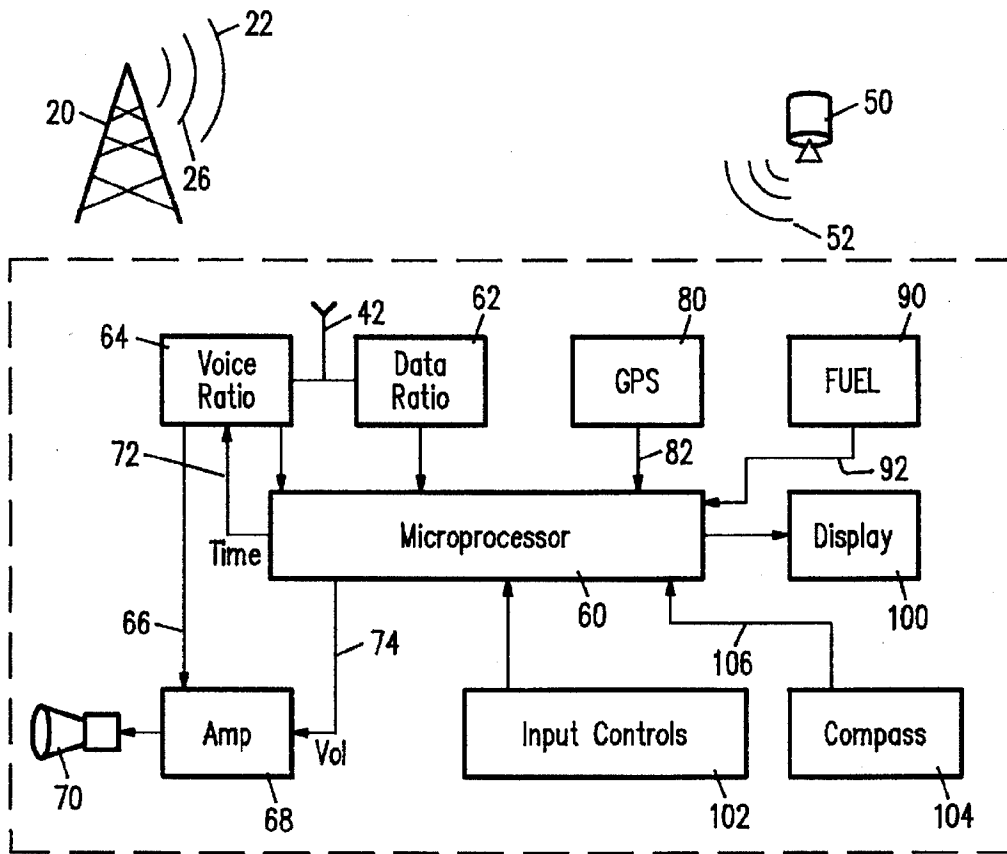


FIG. 2

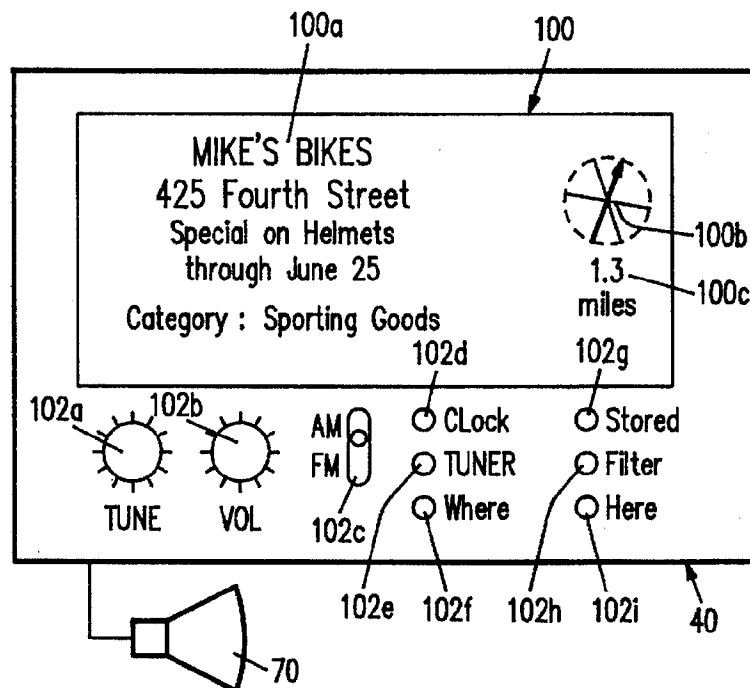


FIG. 3

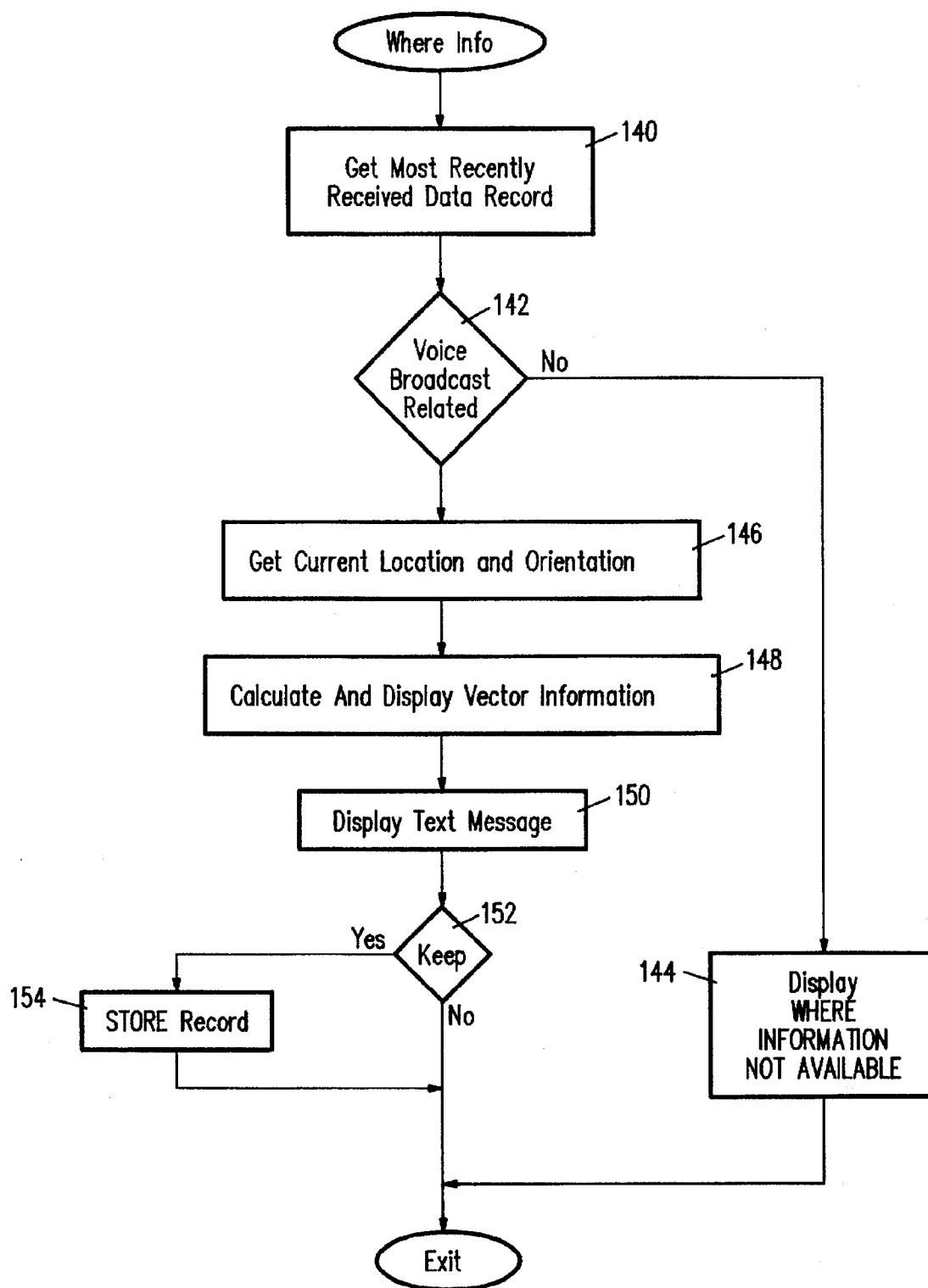


FIG. 4

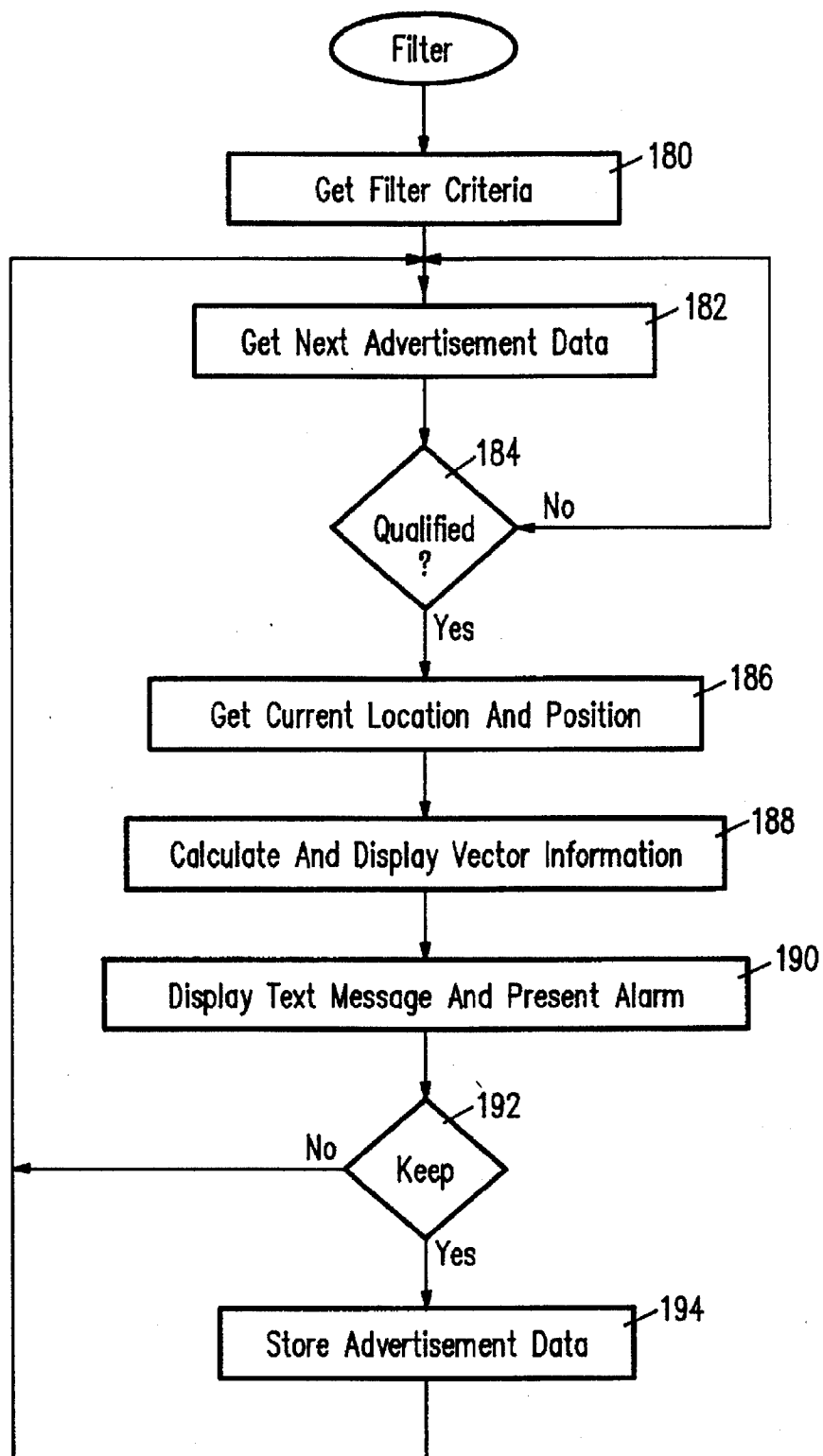


FIG. 5

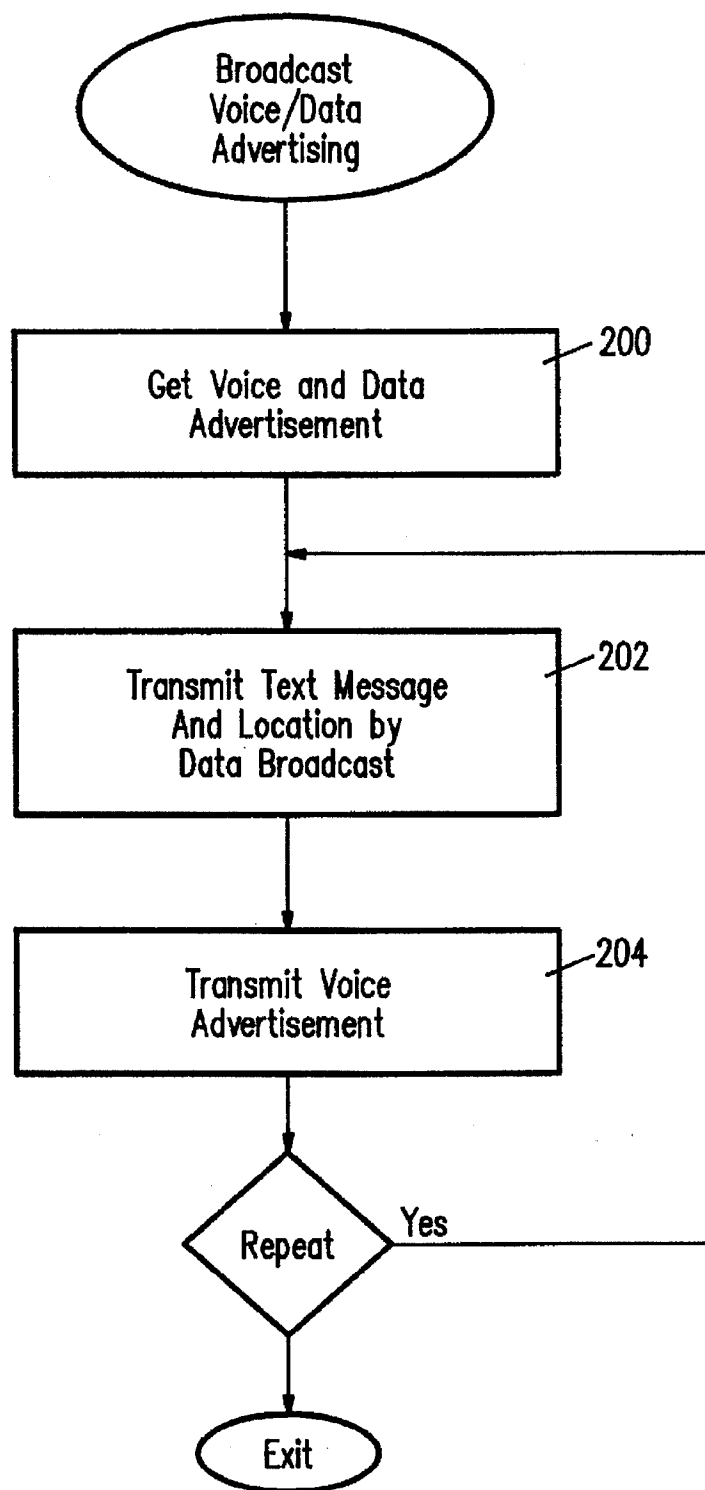


FIG. 6

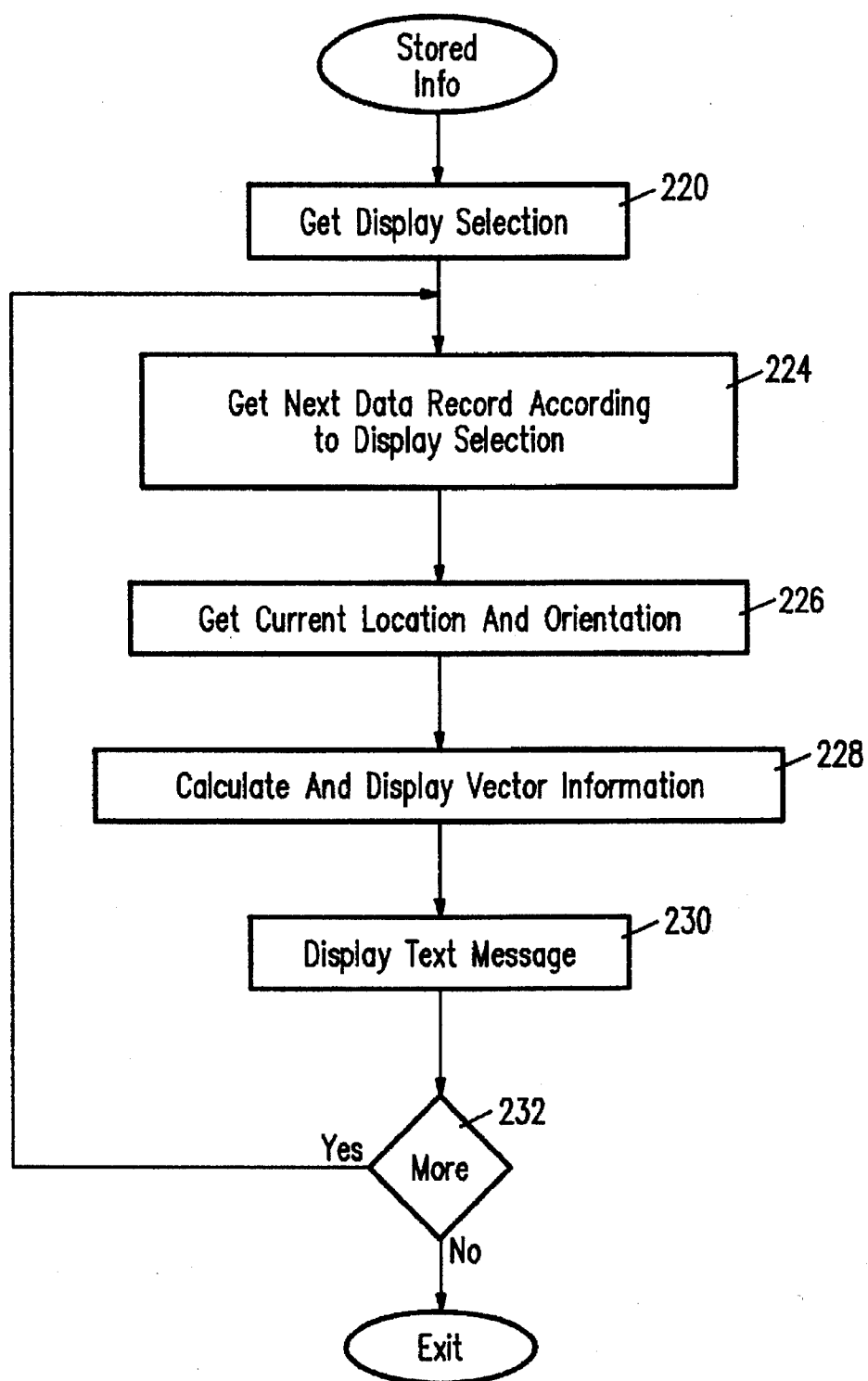


FIG. 7

## DUAL CHANNEL ADVERTISING REFERENCING VEHICLE LOCATION

This application is a continuation of application Ser. No. 08/282,893, filed Jul. 29, 1994 which is now abandoned.

### BACKGROUND OF THE INVENTION

The present invention relates generally to vehicle information systems, and particularly to vehicle information systems providing information relevant to current vehicle location.

A variety of traffic related information is now available for use in aiding vehicle travel, especially in urban road networks. A travel information device likely to be soon more commonly incorporated into vehicles is a vehicle position detecting system, e.g., the well known global positioning system (GPS) providing satellite broadcast to determine location of a receiving GPS device. Vehicles with GPS capability, therefore, have the very useful feature of tracking current vehicle position.

Given access to current vehicle location, i.e., longitude and latitude values, a proposed information system provides vehicle position relative to a map representation of a given region, e.g., a map display of city streets with vehicle position indicated by street location rather than longitude and latitude position. Thus, a digital map database further supports vehicle position display by reference to more meaningful information, i.e., by reference to a street map. To be of value, however, the digital map database must be current and comprehensive, i.e., have information relevant to wherever a vehicle may be used.

Massive digital map databases are, however, inherently expensive and difficult to include in mass produced products such as is desirable in a GPS-capable consumer product. Digital map databases require license fees, large amounts of memory, frequent and expensive revision, and generally cannot be comprehensive enough to allow use throughout the entire world. It is not economically feasible to provide in an inexpensive consumer product a digital map database covering the entire world, or at least a significant geographic region. If the device is prepared for use throughout the world, an incredibly massive digital map is required giving rise to significant cost and maintenance requirements. If only selected geographic regions are incorporated into the digital map, the device cannot be used outside such geographic regions without post-manufacture modification or manipulation of numerous storage devices, e.g., a library of CD-ROM discs.

It would be desirable, therefore, for a vehicle information device to be usable in any geographic area as manufactured yet still maintain an ability to indicate vehicle position information beyond merely longitude and latitude. In particular, people need more meaningful information than merely longitude and latitude, yet a massive digital map is difficult to justify in the context of relatively inexpensive consumer products. The need for current vehicle position is most typically a need to know current vehicle position relative to a location of interest. Unfortunately, customizing massive digital databases to provide reference to individual vehicle operator locations of interest is impractical. It would be desirable to avoid a requirement of procuring and maintaining in the travel information device a massive digital database, yet maintain an ability to reference geographic locations. The subject matter of the present invention provides such a vehicle travel information device.

### SUMMARY OF THE INVENTION

In accordance with the present invention, a travel information device in a vehicle includes a vehicle position detecting device and collects vehicle position information while also collecting data relevant geographic points of interest to provide a display indicating position of a point of interest relative to a current vehicle location.

In the illustrated and preferred form of the present invention, collecting information relevant to geographic points of interest is by radio signal data broadcast in conjunction with radio signal voice broadcast, such as advertising, whereby a user interrogates a device under the present invention to collect by data broadcast detailed information concerning an advertisement of interest provided by a companion voice broadcast. The data broadcast includes precise location information providing, in conjunction with current vehicle position, a basis for presenting a display graphically showing relative position between the geographic point of interest, such as the location of an advertiser, and the current vehicle location.

According to one aspect of the present invention, storage of information relative to geographic points of interest builds for the user a personal electronic reference for later selectively displaying such information, including ability to selectively display a representation of location relative to a then current vehicle position.

The subject matter of the present invention is particularly pointed out and distinctly claimed in the concluding portion of this specification. However, both the organization and method of operation of the invention, together with further advantages and objects thereof, may be best understood by reference to the following description taken with the accompanying drawings wherein like reference characters refer to like elements.

### BRIEF DESCRIPTION OF THE DRAWINGS

For a better understanding of the invention, and to show how the same may be carried into effect, reference will now be made, by way of example, to the accompanying drawings in which:

FIG. 1 illustrates a vehicle information system, a given road network, and a vehicle travelling within the road network and carrying a travel information device according to a preferred form of the present invention.

FIG. 2 is a block diagram of the travel information device for the vehicle of FIG. 1.

FIG. 3 illustrates the front panel controls and display of the travel information device of FIG. 2 as viewed by the operator of the vehicle of FIG. 1.

FIG. 4 illustrates by flow chart a first method of collecting data for storage by the travel information device wherein the user hears by voice broadcast information of interest and selects corresponding data broadcast information for storage.

FIG. 5 illustrates by flow chart an alternative method for collecting information from the data broadcast whereby the operator designates collection criteria and the travel information device automatically collects qualifying data broadcast information.

FIG. 6 illustrates by flow chart programming for a radio broadcast system coordinating or associating voice radio broadcast with data radio broadcast.

FIG. 7 illustrates by flow chart programming of the travel information device of FIG. 1 for scanning or reviewing of information stored therein.

### DETAILED DESCRIPTION OF A PREFERRED EMBODIMENT

In FIG. 1, a vehicle 10 travels within a road network 12. Network 12 includes main arterial roadways as illustrated, but as may be appreciated would be significantly more complex. For the present illustration, it will be understood that vehicle 10 travels throughout road network 12 along any selected travel route. Furthermore, the operator of vehicle 10 travels within road network 12 to and from geographic points of interest 14, individually designated 14a-14d. While only several such geographic points of interest 14 are indicated in FIG. 1, it will be understood that any number of such geographic points of interest 14 may exist within road network 12. Furthermore, geographic points of interest 14 for one individual vary relative to that of another individual. Accordingly, reference herein to geographic points of interest 14 shall be taken to be locations of interest to a particular person.

Also illustrated in FIG. 1, radio broadcast system 20 provides a combined radio signal voice broadcast 22 and radio signal data broadcast 26. While illustrated as a single radio broadcast system 20, it will be understood that voice broadcast 22 and data broadcast 26 could originate from separate radio signal broadcast facilities. Under the preferred form of the present invention, however, voice broadcast 22 and data broadcast 26 originate from a common FM radio source as provided under the "Gaskill" paging system. The present invention may be implemented according to many paging system protocols, but as illustrated herein operates under the time-division multiplexed protocol of the Gaskill paging system, as illustrated in U.S. Pat. Nos. 4,713,808 and 4,897,835. The disclosure of U.S. Pat. Nos. 4,713,808 and 4, 897,835 are incorporated herein fully by reference thereto.

The Gaskill paging system and associated receiving devices provide an inexpensive, highly battery-efficient and highly miniaturized paging device which, under the illustrated embodiment of the present invention, constitutes a data radio signal receiver 62 (FIG. 2) as a conduit for data broadcast 26 delivery to device 40.

Generally the Gaskill paging system uses FM radio signal transmission facilities to broadcast within a side-band frequency paging signal data packets according to a time-division multiplexed protocol. Thus, voice broadcast 22 comprises the normal FM radio signal broadcast and data broadcast 26 represents the side-band paging system broadcast.

It will be understood, therefore, that radio broadcast system 20 provides coordinated voice and data by radio signal. In particular, radio broadcast system 20 receives voice advertisement and data message information 28, e.g., an advertising subscription, and integrates the data message portion thereof into other incoming paging system data packets originating from a Gaskill paging system clearinghouse 30. In this manner, radio station 20a coordinates or associates voice and data broadcasts 22 and 26, respectively. As may be appreciated, however, the data message portion of information 28 could be routed through clearinghouse 30, in which case radio station 20a associates a voice broadcast 22 with a data broadcast 26 originating entirely from clearinghouse 30. Such association may be provided by a number of arrangements, but under the illustrated form of the present invention, association of voice broadcast 22 and data broadcast 26 shall be by time relation, e.g., concurrently broadcast, broadcast in close time relationship, or at given time offset.

Vehicle 10 includes a travel information device 40 receiving by way of antenna 42 the voice broadcast 22 and data broadcast 26. Thus, device 40 receives conventional FM voice broadcasts and paging data broadcasts the Gaskill paging system protocol. In this manner, device 40 receives associated voice and data broadcasts whereby an operator of vehicle 10, upon hearing a voice broadcast of interest, captures the associated data broadcast to collect and store within device 40 detailed information, i.e., a data record including longitude and latitude, for a geographic point of interest 14.

FIG. 1 also illustrates a global position system (GPS) satellite 50 providing transmission 52. Details and use of GPS transmission and the collection of such transmission to determine location of a GPS receiver are well known. Use of GPS transmission 52 under the present invention is by incorporation of a global position system receiving device into travel information device 40 collection of a current vehicle position therewith as described more fully hereafter.

Thus, travel information device 40 receives several channels of information. First, voice broadcast 22 provided by radio broadcast system 20 provides to the vehicle operator a stream of voice information potentially including reference to geographic points of interest 14, i.e., advertisers located within road network 12. Second, data broadcast 26, as provided in association with voice broadcast 22, provides further detailed text message information captured selectively by device 40, e.g., when commanded by the operator of vehicle 10. This establishes, among other detailed information, a precise location for a geographic point of interest 14. Third, the global position system transmission 52 provides a current vehicle location and, therefore, a basis for presenting location of geographic points of interest 14 relative to current vehicle position.

As described more fully hereafter, device 40 maintains a database containing a collection of data records obtained from data broadcast 26. Each data record corresponds to a geographic point of interest 14, and device 40 displays a vector, i.e., distance and direction, indicator illustrating the relative position of a given geographic point of interest 14 relative to current vehicle location. In this manner, device 40 constructs and maintains information specific to a user of device 40, i.e., maintains information relative to geographic points of interest 14 selected by the operator of vehicle 10, and further provides meaningful position information beyond longitude and latitude for such points of interest 14 without reference to a massive digital map database of the road network 12. Device 40 maintains current information relative to a given geographic region and specific to selected geographic points of interest 14. Under one aspect of the present invention, such geographic points of interest 14 correspond generally to locations of advertisers providing, by way of radio broadcast system 20, both voice information in broadcast 22 and detailed message or text data in broadcast 26. This allows listeners to later reference such data and locate the corresponding geographic point of interest 14 relative to a then current vehicle position.

FIG. 2 illustrates in block diagram travel information device 40. In FIG. 2, a microprocessor 60 orchestrates generally operation of device 40. Data radio signal receiver 62 couples antenna 42 to microprocessor 60. As contemplated under the preferred form of the present invention, data radio signal receiver 62 comprises essentially a paging system receiver operating under the Gaskill paging system. Thus, the Gaskill system paging device provided as receiver 62 serves as a data terminal collecting data broadcast 26 and providing to microprocessor 60 detailed information asso-



ciated with, for example, an associated voice advertisement broadcast in voice broadcast 22. A voice radio receiver 64, also coupled to antenna 42, receives the voice broadcast 22 and delivers a voice signal 66 to an amplifier 68 driving a speaker 70. Microprocessor 60 tunes voice radio receiver 64 by way of a tune control 72. Thus, microprocessor 60 selects a radio signal voice broadcast 22 by tune control 72 and, by way of volume control 74 applied to amplifier 68, causes presentation of the corresponding voice broadcast on speaker 70.

A global position system receiver 80 receives the transmission 52 from global position system satellite 50 and delivers to microprocessor 60 a current vehicle location 82. In this manner, microprocessor 60 requests from global position system radio receiver 80 a current vehicle location and receives in return the current vehicle location 82.

Microprocessor 60 receives other vehicle information. For example, a fuel gauge sensor 90 provides a fuel remaining input 92 to microprocessor 60.

Microprocessor 60 drives a display 100. Display 100 presents, for example, tuning and station selection information relative to the voice radio receiver 60 to provide an FM radio capability wherein the operator of vehicle 10 manipulates input controls 102, i.e., volume, station select, and other controls described more fully hereafter, to listen to a selected voice broadcast 22. Display 100 further presents, as described more fully hereafter, data relevant to stored geographic points of interest 14 and also graphic indication, i.e., a vector indicating distance and direction, of a selected geographic point of interest 14 relative to the current vehicle location.

A compass 104 provides a vehicle orientation input 106 to microprocessor 60. Device 40 uses the current vehicle position, i.e., as provided by vehicle location 82, and also the current vehicle orientation, as provided by input 106, to calculate a graphic indication, i.e., a display vector orientation, indicating direction of travel for a geographic point of interest 14 relative to the current vehicle position. To portray on display 100 the relative direction, i.e., toward the geographic point of interest, current vehicle orientation is considered. Thus, calculation and display of a vector on display 100 begins with calculation of distance between two points designated by longitude and latitude values, i.e., distance between the current vehicle location and the geographic point of interest 14, and calculation of an angle of orientation for a direction of travel. In other words, display 100 has a fixed relationship relative to vehicle 10 and vehicle orientation input 106 supports an accurate display of a direction of travel as presented by vector icon on display 100. Furthermore, the display presented may be updated as vehicle 10 moves and the distance between vehicle 10 and the geographic point of interest 14 changes and also as vehicle orientation changes.

FIG. 3 illustrates a front view of the travel information device 40 monitoring the combined voice and data broadcasts 22 and 26 and global positioning system broadcast 52. FIG. 3 also illustrates display 100 and input controls 102. Input controls 102 include a tune dial 102a, a volume dial 102b and an AM/FM switch 102c. As may be appreciated, device 40 operates, from a user perspective, in part as a conventional car radio. The user manipulates input controls 102a-102c to listen to a voice broadcast 22 on speakers 70. Additional control inputs 102 for device 40 include a clock button 102d, a tuner button 102e, a where information button 102f, a stored information button 102g, a filter button 102h, and a here button 102i. Use of input controls

102d-102i will be explained more fully hereafter, but generally provide to the user various display presentations relative to display 100 and modes of operation for device 40.

As illustrated in FIG. 3, display 100 presents a text message display portion 100a showing information such as vendor name, address, and current marketing information, for example, a sale or promotional activity including a date of availability for the promotional activity. Display portion 100a further presents a category of vendor, e.g., sporting goods. As may be appreciated, the data records obtained from data broadcast 26 and stored in device 40 include a variety of fields as indicated generally by the display portion 100a in FIG. 3. In such form, information maintained in device 40 may be manipulated in the manner of a database, e.g., searching, sorting, and other such database record management functions.

Display 100 further provides a vector angle portion 100b and a vector distance-to-travel portion 100c. As described herein above, angle portion 100b indicates the relative orientation of a direction of travel from the current vehicle location to a selected geographic point of interest 14. Distance-to-travel portion 100c represents the distance separating the current vehicle location and the geographic point of interest. The angular orientation of portion 100b desirable takes into account the current vehicle 10 orientation input 106 as provided by compass 104. Presentation of vector angle portion 100b should, therefore, indicate generally a direction of travel considering the viewer's perspective, i.e., looking at display 100 from within vehicle 10, to indicate appropriately the relative orientation of a direct line-of-sight or direction-of-travel from the current vehicle position to the geographic point of interest 14.

Clock button 102d, when pressed, causes presentation by microprocessor 60 on display 100 the current time of day. Tuner button 102e, when pressed, causes presentation on display 100 by microprocessor 60 information relevant to tuning voice broadcast radio 64, e.g., frequency of station currently tuned, preset features available, and any other information normally displayed in connection with operation of a voice broadcast radio.

Where information button 102f, when pressed, indicates to microprocessor 60 operator desire to collect information from data broadcast 26. For example, voice broadcast 22 and data broadcast 26 are synchronized broadcasts and the operator of device 40 hears an advertisement of interest provided by way of voice broadcast 22 and presses the where information button 102f for further information. Microprocessor 60 then collects a data record, i.e., text message information relative to the advertisement of interest, by way of data broadcast 26 and data receiver 62. Text message information presented in display portion 100a is obtained, therefore, by the operator activating the where information button 102f during or just after a voice broadcast advertisement of interest.

Device 40 holds multiple data records, i.e., one for each geographic point of interest 14. Stored information button 102g allows scanning through such stored data records and selective display of the previously stored data record for a geographic point of interest 14. In this manner, the user of device 40 constructs a personal electronic reference tracking travel information including data records for particular geographic points of interest 14, i.e., data records selected by and of interest to a particular user. The user thereby builds a personalized and current database of geographic points of interest 14.

Filter button 102h drives device 40 into an automatic data collection mode according to user selected filter criteria. For

example, device 40 monitors the stream of data provided in data broadcast 22 and compares location information therein to the current vehicle location to collect all references within a given distance of current vehicle location. Additionally, the user establishes a category of interest, e.g., auto parts advertisements, grocery store advertisements, sporting goods or restaurant advertisements, to further filter information available in data broadcast 22. In this manner, the user of device 40 creates automatically a customized database by designating geographic points of interest 14 according to user-selected criteria.

The here button 102i provides another method of creating a data record concerning a geographic point of interest 14 within device 40, in this case one corresponding to current vehicle location. The operator presses here button 102i and creates a geographic point of interest 14 data record corresponding to current vehicle location. This allows the user to begin at a given location, operate here button 102i, and have ability to reference that given location later while travelling, e.g., to return to that given location or to have directional indication of that given location from another vehicle location. The data record created by device 40 in response to the here button 102i includes at least the longitude and latitude information corresponding to the vehicle position at the time of button 102i activation. Additional textual information can be entered by the user if desired, e.g., textual information entered by operation of control inputs 102 in response to supporting prompts presented on display 100. For example, the user may wish to name a location in conjunction with activating the here button 102i for meaningful later reference thereto.

FIG. 4 illustrates programming of microprocessor 60 for information collection from data broadcast 26, i.e., in this case in response to activation of where information button 102f. In FIG. 4, it will be assumed that voice broadcast 22 and data broadcast 26 are associated by simultaneous broadcast. As may be appreciated, other association methods may be employed and incorporated into the illustrated embodiment of the present invention. Processing in response to user activation of the where information button 102f begins in block 140 where microprocessor 60 collects the most recently received data record of data broadcast 26. As shown in the present embodiment, voice broadcast 22 and data broadcast 26 are associated by simultaneous presentation and microprocessor 60 need only collect in response to activation of the where information button 102f the current presented or most recently presented data record in data broadcast 26. In anticipation of such task, microprocessor 60 always collects in an input buffer (not shown) each data record presented in data broadcast 26. For each new data record presented, the old, previous data record is replaced in the input buffer. Thus, when the operator activates where information button 102f, the input buffer holds, or will soon hold, a complete data record taken from data broadcast 26 and associated with the current voice broadcast 22 presentation. Thus, processing in block 140 implements a method of association between voice broadcast 22 and data broadcast 26.

Decision block 142 determines whether the current voice broadcast 22 is related to the most recently received data record. For example, not every voice broadcast 22 presentation, e.g., advertisement, will have an associated data record available in data broadcast 26. For example, if the data record most recently received by way of data broadcast 26 is "stale" then it should not be taken as related to the current voice broadcast 22 presentation. In such case, processing branches through block 144 where device 40

presents on display 100 the message "where information not available" and processing terminates. If, however, the data record most recently received is related to the voice broadcast 22 presentation, i.e., not "stale", then processing advances to block 146 where microprocessor 60 obtains the current vehicle location and vehicle orientation. As may be appreciated, determining whether a given data record is "stale" may be implemented by time-stamping data records held in the input buffer. The length of time required to become "stale" in the input buffer is variable and a function of how quickly the operator of vehicle 10 must activate the where information button 102f.

Microprocessor 60 then calculates in block 148 the angle portion 100b and distance-to-travel portion 100c. In other words, microprocessor 60 calculates an angle of orientation for the arrow icon presented in portion 100b using the current vehicle orientation 106 and the direction of travel toward the subject geographic point of interest 14. Microprocessor 60 then calculates the distance-to-travel value for portion 100c as the separation between the current vehicle position and subject geographic point of interest 14.

As may be appreciated, a timer interrupt may also be set to iteratively execute procedures updating the display portions 100b and 100c as the vehicle changes orientation and location relative to the geographic point of interest 14 associated with the current data record. Furthermore, microprocessor 60 may take into account fuel remaining input 92 in comparison to expected vehicle 10 mileage and consider separation between current vehicle position and the subject geographic point of interest 14. If vehicle 10 holds insufficient fuel to make the trip to the subject geographic point of interest, an appropriate display may be presented to indicate such condition to the vehicle operator.

Continuing to block 150, microprocessor 60 presents in display portion 100a the text message portion of the current data record, e.g., vendor name, address, phone number, and any other special promotional information provided. In decision block 152, the operator has opportunity to keep for permanent storage the current data record, in which case processing branches through block 154 where the current data record is stored for later reference, i.e., by operation of the stored information button 102g. Otherwise, processing exits directly from decision block 152.

FIG. 5 illustrates by flow chart an alternative method for gathering information from the data broadcast 22, i.e., gathering information automatically according to user-designated criteria in response to filter button 102h. In this manner, the operator need not monitor voice broadcast 22 to collect information of potential interest by way of data broadcast 26.

In FIG. 5, processing begins in block 180 where microprocessor 60 obtains, from the user, appropriate filtering criteria. For example, user interaction is conducted by way of display 100 and alternate functions defined for control inputs 102 to collect from the user a designation of filter criteria. For example, the user may be interested in all data records broadcast and being associated with a location within a given distance of current vehicle location. In this manner, the user collects advertising information for vendors in close and convenient proximity to current vehicle location. Also, data records are classified according to category, and the user designates as qualifying under user criteria certain categories of information. For example, the user may be interested in certain types of products or services advertised and having associated data records in data broadcast 22. In any event, block 180 represents user

designation of criteria applied to data records appearing in data broadcast 22, i.e., which of those data records will be accepted and stored by device 40 for later reference by operation of the stored information button 102g.

Continuing to block 182, microprocessor 60 gets the next data record provided in data broadcast 22 and, in decision block 184, applies the user-designated criteria. If the data record collected in block 182 meets the user-designated criteria provided in block 180, then processing advances to block 186. Otherwise, processing returns to block 182 from decision block 184 to collect the next data record appearing in data broadcast 26. In block 186, microprocessor 60 obtains the current vehicle position and orientation. Continuing to block 188, microprocessor 60 calculates and displays the arrow icon at appropriate angle of orientation and the distance-to-travel value in display portions 100b and 100c, respectively.

Then, in block 190, microprocessor 60 displays the text message data available in the collected data record. An alarm presented in block 190 indicates to the user collection of a data record potentially of interest, i.e., satisfying the user-designated criteria provided in block 180. Decision block 192 allows the user opportunity to discard or keep for permanent storage the data record just collected. Accordingly, if the user declines storage of the just-collected data record then processing returns immediately to block 182. Otherwise, processing advances through block 194 where the just-collected data record is stored for later reference by operation of the stored information button 102g. Processing then returns from block 194 to block 182 for collection of a next data record.

As may be appreciated, an exit procedure (not shown) interrupts the data record collection loop represented by flow chart in FIG. 5. For example, the user may wish to terminate collection or may wish to modify the designation of data record collection criteria in block 180. Furthermore, processing at decision block 192 need not forego collection of additional data records in data broadcast 26. In other words, additional records may be queued for review by the operator even though microprocessor 60 is awaiting input at decision block 192. Also, should the operator not respond immediately at decision block 192, a time-out feature allows processing to advance without requiring user input, e.g., accepts for storage the data record qualifying under the user designated criteria and allows the user to later delete the record from device 40.

FIG. 6 illustrates by flow chart processing conducted by the radio broadcast system 20 in providing associated voice broadcast 22 and data broadcast 26. In FIG. 6, processing begins in block 200 where radio broadcast system 20 receives an advertising subscription including both voice advertising for presentation in the voice broadcast 22 and message information for presentation in the data broadcast 26. As noted herein above, association between the voice advertisement and message data is by simultaneous broadcast. Thus, system 20 transmits in block 202 the text message information and location information in data broadcast 26 followed by transmission of the voice presentation in voice broadcast 22. As may be appreciated, processing in blocks 202 and 204 repeats intermittently, i.e., according to how often and when the dual channel advertisement is to be broadcast.

FIG. 7 illustrates programming for microprocessor 60 in response to activation of the stored information button 102g. In FIG. 7, processing begins in block 220 where microprocessor 60 presents opportunity for the user to scan stored

data records according to a given criteria, i.e., get a display selection from the user of device 40. For example, the user wishes to display data records according to a certain sequence or to display only records meeting a certain criteria, e.g., restaurant advertisements. Having obtained a display selection from the user, processing advances to block 224 where microprocessor 60 gets a next data record according to the user-designated display selection. Continuing to block 226, microprocessor 60 obtains the current vehicle position and orientation. Then, in block 228, microprocessor 60 calculates and presents display portions 100b and 100c, i.e., displays vector information indicating the distance and relative orientation to a geographic point of interest 14 corresponding to the data record currently presented. Continuing to block 230, microprocessor 60 displays at display portion 100a the text portion of the data record for review by the user. Decision block 232 provides the user opportunity to terminate scanning of stored information in which case processing exits from decision block 232. If the user continues scanning through the scored data records according to the designated display selection, then processing returns from decision block 232 to block 224 where a next data record in the sequence is selected for review by the user.

Important to note, as the user scans through stored data records and obtains a presentation on display 100, the then-current vehicle orientation and location are referenced to present a then-current relative position in display portions 100b and 100c, i.e., the current relative direction of travel and distance to the geographic point of interest 14 associated with the data record currently displayed by device 40. Also, processing illustrated in FIG. 7 initiates a timer interrupt procedure updating display portions 100b and 100c as the vehicle orientation and location relative to the currently displayed geographic point of interest 14 changes.

The scanning procedure illustrated in FIG. 7 may, as will be appreciated, be augmented to include additional features such as deleting data records, sorting on various fields of the text message portion, and applying additional category values whereby the user may better manage a collection of information maintained in device 40 and relevant to travel of vehicle 10 to and from geographic points of interest 14.

Thus, an improved vehicle information device and method of operation have been shown and described. Under the present invention, a user builds a customized database containing geographic points of interest, including precise longitude and latitude information and ability to provide distance and orientation of travel toward the geographic point of interest and in relation to the current vehicle location. In this manner, the user obtains useful information by way of radio signal without requiring reference to a massive digital database of the surrounding geographic area. Information obtained by radio signal is always current, i.e., replaced by subsequent broadcast. In this manner, the operator maintains a dynamic and up-to-date database of specific geographic points of interest.

It will be appreciated, that the present invention is not restricted to the particular embodiment or embodiments that have been described and illustrated herein, and that variations may be made therein without departing from the scope of the invention as found in the appended claims and equivalents thereof.

What is claimed is:

1. A method for providing specific time and location sensitive advertising information to a moving vehicle, said specific time and location sensitive advertising information being selected from a large body of advertising information

## 11

including a large number of records, each record including a specific time and location sensitive advertising information, the method comprising the steps:

transmitting to said vehicle by radio time said large body of advertising information, 5

receiving at said vehicle said large body of advertising information;

at a specific time, determining the location of said vehicle; and

selecting for display at said vehicle one of said records for display, said selection being at least in part based on the time of day and upon the location of said vehicle. 10

2. A method of providing time and location sensitive advertising information to the operator of a moving vehicle, the method comprising the steps:

## 12

receiving multiple data records by radio signal, each data record containing time of day information and location sensitive advertising information;

storing said data records;

calculating current location for said vehicle; and

selecting for display one of said records containing time of day information and location specific advertising information depending upon the time of day information and the location of said vehicle;

displaying said selected record containing time of day information and location specific advertising information.

\* \* \* \* \*